National Museums
of Canada

National Museum
of Natural Sciences

Ottawa 1981

Publications in Zoology, No. 15

TYPE SPECIMENS OF MOLLUSCS IN THE NATIONAL MUSEUM OF NATURAL SCIENCES, NATIONAL MUSEUMS OF CANADA OTTAWA, CANADA

Muriel F.I. Smith
Invertebrate Zoology Division
National Museum of Natural Sciences
National Museums of Canada
Ottawa, Ontario, Canada K1A 0M8

Publications de zoologie, n° 15

Musées nationaux
du Canada

Musée national
des Sciences naturelles

National Museum of Natural Sciences
Publications in Zoology, No. 15

Published by the
National Museums of Canada

© National Museums of Canada 1981

National Museum of Natural Sciences
National Museums of Canada
Ottawa, Canada

Catalogue No. NM 95-10/15

Printed in Canada

ISBN 0-662-00014-5
ISSN 0068-8037

Musée national des Sciences naturelles
Publications de zoologie, n° 15

Publié par les
Musées nationaux du Canada

© Musées nationaux du Canada 1981

Musée national des Sciences naturelles
Musée nationaux du Canada
Ottawa, Canada

N° de catalogue NM 95-10/15

Imprimé au Canada

ISBN 0-662-00014-5
ISSN 0068-8037

Contents

Abstract, iv

Résumé, iv

Introduction, 1

Marine Species:

Monoplacophora, 2
Triblidiacea, 2
Polyplacophora, 2
Chitonida, 2
Gastropoda, 3
Mesogastropoda, 3
Neogastropoda, 4
Entomotaeniata, 6
Thecosomata, 8
Sacoglossa, 8
Nudibranchia, 9
Basommatophora, 9
Scaphopoda, 9
Pelecypoda, 9
Nuculoida, 9
Pterioida, 11
Veneroida, 12
Myoida, 13
Septibranchoida, 13

Freshwater and terrestrial species:

Gastropoda, 14
Mesogastropoda, 14
Basommatophora, 16
Stylommatophora, 18
Pelecypoda, 23
Schizodonta, 23
Heterodonta, 24

Doubtful Types, 24

Acknowledgements, 27

Literature Cited, 28

Index (families, genera, species, subspecies), 32

Abstract

The type specimens of molluscs in the Invertebrate Division of the National Museum of Natural Sciences are listed with a brief commentary on the origins of the mollusc collection and type-handling procedures. The 216 primary and secondary types appear under headings of class, order, family and the current generic name. For each species or subspecies, the original description is cited; also the first-published name is given if revision has occurred. Literature references are provided for name changes or where the species has been relegated to synonymy.

There are 64 families represented from localities in 13 countries, the Arctic Ocean, north and south Atlantic Ocean, Chukchi Sea, Labrador Sea and the north and south Pacific Ocean.

Résumé

La liste des spécimens de mollusques désignés comme types dans la collection de la Division de la Zoologie des Invertébrés du Musée national des sciences naturelles contient un bref commentaire sur les origines de la collection de mollusques et des procédures de conservation des types. Les 216 types primaires et secondaires sont placés sous les titres de classe, ordre, famille ; on fournit aussi le nom générique courant. La description originale est citée pour chaque espèce et sous-espèce ; de plus, le nom le plus ancien apparaît s'il y a eu une révision. Des références sont fournies pour les changements de noms ou dans les cas où l'espèce a été reléguée à la synonymie.

Cet ouvrage porte sur 64 familles qui proviennent de 13 pays, l'océan Arctique, le nord et le sud de l'océan Atlantique, la mer Tchuckchi, la mer du Labrador et le nord et le sud de l'océan Pacifique.

Introduction

The Museum of Natural Sciences in Ottawa has a worldwide mollusc collection of more than two and a half million dry and preserved specimens. It is considered the fifth largest in North America, with collections from Atlantic, Pacific and Arctic waters as well as native and exotic terrestrial species. The Canadian freshwater fauna is particularly well represented.

Our type holdings contain specimens from the Arctic Ocean, north and south Atlantic Ocean, Chukchi Sea, Labrador Sea and the north and south Pacific Ocean. The countries represented are Angola, Bahama Islands, Canada, Cuba, Japan, Mexico, New Zealand, Peru, Society Islands (France), South Sandwich Islands (U.K.), Trinidad and Tobago, and the United States.

Type specimens are of paramount importance in taxonomic work as these are the specimens on which the description of each species or subspecies is based. They become standards for subsequent identification and nomenclature of the species. The International Commission on Zoological Nomenclature in its International Code of Zoological Nomenclature (London, 1964), currently being revised, has established strict rules for the presentation of a proposed new species, including the obvious value of an accompanying illustration. It emphasized the need to deposit types in a scientific institution to be secure for posterity.

For all nominal species or subspecies the type specimens are defined as follows:

Holotype: Either a unique specimen or the specimen selected by the author from the type-series to represent the described species.

Syntype: The name applied to all specimens in the original type-series when a holotype has not been selected by the author.

Paratypes: The remaining specimens (if any) in the type-series after the holotype has been designated.

Lectotype: If no holotype exists, one of the syntype or paratype specimens may subsequently be designated as the lectotype of that species.

Neotype: If all specimens in the original type-series have been lost or destroyed and no holotype, lectotype or syntype exists, an author doing revisory work may designate a substitute type specimen, called the neotype. The ICZN (1964) lists 6 conditions to be observed to ensure the validity of this type designation.

Topotype: Specimen(s) from the type locality but not part of the original type-series.

In the National Museum of Natural Sciences the mollusc types are kept separated from the main collection and to date 216 types have been segregated. Topotypes are marked but remain in the main collection.

Each type lot has a regular museum label showing catalogue number, name, locality, date collected and the accession number, with a red strip added, on which the type category is marked. The catalogue number, on a separate slip inserted with the specimen(s), is marked in red. The nature of the specimen (preserved or dry) is also indicated in the catalogue.

The Invertebrate Zoology Division does not lend primary types unless exceptional circumstances require that such a type be hand carried to another museum for further study. Researchers are welcome to examine these specimens in the Mollusc Section. Paratypes may be borrowed by workers connected with museums or other research institutions.

In this report the entries are divided into marine and non-marine categories under headings of class, order and family with the genera listed alphabetically. For each species or subspecies, the author, date of publication, page number and plate or figure reference is cited. The type category, catalogue number, number of specimens and if dry or in alcohol (having soft parts) is given, as well as the collector and date. Under locality, the original description is given, with any added geographic information in parentheses. Metric equivalents also have been inserted. The country of origin is included for all non-Canadian collections. In the case of paratypes, the institution holding the holotype (if known) is mentioned in Remarks.

Information on taxonomic name changes is provided. Species are listed under their current generic name, with the originally-published name given in square brackets. The author and literature reference for the change appears under Remarks. In some instances the species name has been relegated to synonymy and this is noted with a reference to the authority and where published. The abbreviated references in the text are listed in full in Literature Cited. Authorities for generic names in the headings are not cited.

In the early days of Canadian malacology extensive collections were made by members of the Geological Survey of Canada in the course of their work. Some early publications refer to mollusc types being deposited in the "Geological Survey" which at that time included the National Museum. In 1950, the Recent mollusc collection was transferred from the Geological Survey to the Biological Division of the National Museum of Canada (Russell, 1961) and is now maintained in the Mollusc Section of the Invertebrate Zoology Division of the National Museum of Natural Sciences.

Type material has been received from various sources, including the original collectors, expeditions, museum exchanges and, in recent years, from the authors of new species.

The addendum of "doubtful" type specimens, 11 in number (p. 24), is included because the specimens, when received, were labelled and catalogued as types. In some instances, the original descriptions of these taxa have not yet been located or some aspect of the accompanying data appears questionable; pending further investigation their status is uncertain.

The following abbreviations are used for major institutions:

AMNH — American Museum of Natural History, New York, NY, U.S.A.

ANSP — Academy of Natural Sciences of Philadelphia, PA, U.S.A.

CAS — California Academy of Sciences, San Francisco, CA, U.S.A.

LACM — Los Angeles County Museum of Natural History, Los Angeles, CA, U.S.A.

MCZ — Museum of Comparative Zoology, Harvard University, Cambridge, MA, U.S.A.

NMC — National Museums of Canada, Ottawa, Ontario, Canada

UMMZ — University of Michigan Museum of Zoology, Ann Arbor, MI, U.S.A.

USNM — United States National Museum, Smithsonian Inst., Washington D.C., U.S.A.

CLASS MONOPLACOPHORA
ORDER TRYBLIDIACEA

TRIBLIDIIDAE

Neopilina Lemche 1957

Neopilina (Neopilina) galathea Lemche, 1957:414, figs. 1-4.

PARATYPE NMC 14222 (1 dry)

Locality: Sta. 716, Guatemala Basin, Pacific Ocean, 9°23'N 89°32'W. Depth 3591 m (1963 fm)

Collector: "Galathea Expedition", 6 May 1952

Remarks: A broken specimen.

CLASS POLYPLACOPHORA
ORDER CHITONIDA

ISCHNOCHITONIDAE

Ischnochiton Gray 1847

Ischnochiton abyssicola Smith & Cowan, 1966:1, fig. 21.

PARATYPE NMC 40250 (Cowan No. 5538) (1 in alcohol)

Locality: WNW of Triangle Island, Queen Charlotte Sound, British Columbia, Sta. 863 haul 63-214. Depth 470-480 fm (860-878 m)

Collectors: D.B. Quayle &. I. McTaggart Cowan, 11 September 1964

Remarks: This specimen is a juvenile. Holotype is in the CAS.

CLASS GASTROPODA
SUBCLASS PROSOBRANCHIA
ORDER ARCHEOGASTROPODA

FISSURELLIDAE

Puncturella Lowe 1827

Puncturella decorata Cowan & McLean, 1968:105, pl 13, 1 text fig.

HOLOTYPE NMC 45745 (dry)

Locality: Off west coast of Queen Charlotte Islands, British Columbia, 53°21.3'N 133°04.1'W. Depth 193 m

Collector: Frank R. Bernard, 11 August 1967.

ACMAEIDAE

Notoacmea Iredale 1915

Notoacmea scopulina Oliver, 1926:580, pl 9 fig. 8.

PARATYPE NMC 4627 (1 dry)

Locality: Motutara, west coast, Auckland, New Zealand

Collector: N.W. Powell.

TROCHIDAE

Margarites (Leach) Gray 1847

Margarites ecarinatus Dall, 1919:22A, pl II figs. 5, 6.

HOLOTYPE NMC 4071 (dry)

Locality: Chuckchi Sea, Station 22, 69°35'N 163°27'W. Depth 11-12 fm (18-20 m)

Collector: Fritz Johansen (Canadian Arctic Expedition) 17 August 1913

Remarks: Described as a subspecies, *M. vorticifera ecarinata* by Oldroyd (1927c:202). Synonymized with *M. vorticiferus* (Dall) by Abbott (1974:36).

ORDER MESOGASTROPODA

SEGUENZIIDAE

Seguenzia Jeffreys 1876

Seguenzia floridana Dall, 1927:86.

PARATYPES NMC 3922 (8 dry)

Locality: Station 2415, Atlantic Ocean off Georgia, USA. Depth 440 fm (804 m)

Collector: "U.S. Fish Commission"

Remarks: Holotype in the USNM.

Seguenzia louiseae Clarke, 1961:351, pl 4 fig. 4.

PARATYPES NMC 4740 (2 in alcohol)

Locality: Sta. LGO 18-5, D17, northern end of Cape Basin about 400 mi (645 km) west of Walvis Bay, Southern Africa, 23°00'S 8°11'E. Depth 2262 fm (4137 m)

Collector: "Lamont Geological Observatory", 1958

Remarks: Holotype in the MCZ.

Seguenzia rushi Dall, 1927:87.

PARATYPE NMC 3924 (1 dry)

Locality: Atlantic Ocean, off Georgia USA. Depth 440 fm (804 m)

Collector: "U.S. Fish Commission"

Remarks: Holotype in the USNM.

CYCLOSTREMATIDAE

Brookula Iredale 1912

Brookula (Benthobrookula) exquisita Clarke, 1961:356, pl 3 fig. 8, pl 4 fig. 2.

PARATYPE NMC 4742 (1 in alcohol)

Locality: LGO Sta. 47, approximately 60 mi (96 km) S of South Georgia Island, 55°29'S 37°57'W. Depth 2054 fm (3756 m)

Collector: "Lamont Geological Observatory", R/V "Vema", 1958

Remarks: Holotype in the MCZ.

Brookula (Benthobrookula) powelli Clarke, 1961:355, pl 3 fig. 7, pl 4 figs. 1, 9.

PARATYPES NMC 20047 (5 in alcohol, 2 dry)

Locality: LGO Sta. 51-1, 45°34'S 06°02'E. Depth 2507 fm (4585 m)

Collector: "Lamont Geological Observatory", R/V "Vema", 1958

Remarks: Holotype in the MCZ.

RISSOIDAE

Cingula Fleming 1828

Cingula eyerdami Willett, 1934:103, pl 8 fig. 9.

PARATYPES NMC 4635 (4 dry)

Locality: Elrington Island, Shuyak Strait, Alaska, USA

Collector: W.J. Eyerdam, 1924

Remarks: Holotype in LACM.

Alvania 'Leach' Risso 1826

Alvania karlini Clarke, 1963:94, 1 text fig.

HOLOTYPE NMC 7032 (dry)

Locality: Charlie Biol. Sta. 12. Approximately 700 mi (1129 km) N of Bering Strait, 77°12'N 167°44'W on the western edge of the Chukchi Rise, North Canadian Basin, Arctic Ocean. Depth 290 fm (530 m)

Collector: "Lamont Geological Observatory", 2 June 1960

PARATYPES NMC 6970 (2 dry)

Locality: Charlie Biol. Sta. 3, 77°52'N 172°34'W; 1240 fm (2268 m). 25 November 1959

PARATYPES NMC 6984 (12 dry)

Locality: Charlie Biol. Sta. 4, 77°39'N 172°43'W; 1245 fm (2277 m). 30 November - 1 December 1959

PARATYPES NMC 6996 (6 dry)

Locality: Charlie Biol. Sta. 5, 76°51'N 171°01'W; 1210 fm (2213 m). 11-12 December 1959

PARATYPES NMC 7002 (2 dry)

Locality: Charlie Biol. Sta. 8, 77°13'N 168°12'W; 296 fm (541 m). 20-21 December 1959

PARATYPES NMC 7015 (3 dry)

Locality: Charlie Biol. Sta. 9, 77°14.5'N 168°35'W; 320 fm (585 m). 23 December 1959.

CERITHIIDAE

Bittium Leach 1847

Bittium vancouverense Dall & Bartsch, 1910:19, pl 1 fig. 8.

SYNTYPES NMC 1447 (3 dry)

Locality: Ucluelet to Ship Channel (Newcombe Channel), Barkely Sound, Vancouver Island, British Columbia. Dredged in 8-27 fm (14-49 m)

Collectors: C.H. Young & W. Spreadborough, 1909

Remarks: Other syntypes are in USNM.

Cerithiella Verrill 1882

Cerithiella whiteavesi (Verrill, 1880)a:396 [as *Lovenella whiteavesii*].

SYNTYPES NMC 161 (2 dry)

Locality: Between Island of Anticosti and Gaspé peninsula, Gulf of St. Lawrence. "One in 110 fm (201 m) and the other in 200 fm (365 m)"

Collector: J.F. Whiteaves, 1873

Remarks: Whiteaves (1901:176) reported that the 2 specimens from the Gulf of St. Lawrence which he erroneously identified in 1873 as *Cerithiopsis costulata* (Moller) are the types of Verrill's species, as above. A more detailed description by Verrill (1880b:376) mentioned the specimen collected by Whiteaves, taken in 200 fm (365 m).

ORDER NEOGASTROPODA

MURICIDAE

Boreotrophon Fischer 1884

Boreotrophon macouni Dall & Bartsch, 1910:12, pl 1 fig. 7.

SYNTYPES NMC 1398 (2 dry)

Locality: In Ship Channel (Newcombe Channel), Barkley Sound, Vancouver Island, British Columbia: Sta. 66a. Depth 19-34 fm (34-62 m)

Collector: J. Macoun, 1909

Remarks: The additional locality "near Forbes Island" is on the original label.

Tromina Dall 1918

Tromina bella abyssicola Clarke, 1961:364, pl 2 fig. 10, pl 4 fig. 7.

PARATYPE NMC 4739 (1 in alcohol)

Locality: R/V "Vema" Biol. Sta. 51. Approximately 1000 mi (1614 km) SW of Capetown, South Africa, Agulhas Basin, 45°34'S 06°02'E. Depth 2507 fm (4585 m)

Collector: "Lamont Geological Observatory", 1957

Remarks: Holotype in MCZ.

Tromina traverseensis Clarke, 1961:365, pl 2 fig. 8.

PARATYPE NMC 4738 (1 in alcohol)

Locality: R/V "Vema" Biol. Sta. 49. S of Traverse Island, South Sandwich Islands, 56°43'S 27°41'W, South Atlantic Ocean. Depth 1497 fm (2738 m)

Collector: "Lamont Geological Observatory", 1957

Remarks: Holotype in MCZ.

THAIDIDAE

Thais Roding 1798

Thais floridana haysae Clench, 1927:6, pl 1.

PARATYPE NMC 14072 (1 dry)

Locality: Grand Bayou. Mississippi Delta, Louisiana, USA

Collector: M.L. Hays, 1926

Remarks: The holotype is in the MCZ. Clench (1947:78) referred this subspecies to *Thais haemastoma haysae*.

Thais (Thaisella) langi Clench & Turner, 1948:1947, figs. 7-9.

PARATYPES NMC 13299 (4 dry)

Locality: Lobito Bay, Angola, Africa

Collectors: Lang & Bolten, April 1925

Remarks: Holotype in AMNH.

COLUMBELLIDAE

Pyrene Roding 1798

Pyrene aureola Howard, 1963:1, pls 2.

PARATYPES NMC 14496 (2 dry)

Locality: Norse Beach, Punta Penasco, Sonora, Mexico, 31°20'N 113°38'W

Collector: Faye B. Howard, February 1957

Remarks: The holotype is in the Santa Barbara Museum of Natural History. Keen (1971:573) synonymized this with *Columbella aureomexicana* Howard.

Anachis H. & A. Adams 1853

Anachis (? Costoanachis) fayae Keen, 1971:579, fig. 1178.

PARATYPES NMC 62925 (2 dry)

Locality: Playa Caracol, Neuvo Guaymas, Sonora, Mexico. Intertidal

Collector: Faye B. Howard, February 1967.

BUCCINIDAE

Volutopsius Mörch 1857

Volutopsius stefanssoni Dall, 1919:22A, pl 1.

SYNTYPES NMC 4128 (3 dry)

Locality: Sta. 24, Sandspit at Point Barrow, Alaska, USA

Collector: Fritz Johansen (Canadian Arctic Expedition 1913-18) 23 August 1913

Remarks: Dall's description mentioned that the three specimens from Point Barrow were fragmentary or immature and that the description was aided by examination of an adult in the USNM. Evidently the above are considered the type specimens because Dall quoted the station and catalogue numbers and named the species in honour of the commander of the Canadian Arctic Expedition.

Colus Bolten 1798

Colus hunkinsi Clarke, 1960:3, pl 1 fig. 9.

PARATYPE NMC 3919 (1 dry)

Locality: Arctic Ocean, 800 ± mi (1291 km) N of Cape Barrow, Alaska, USA, 85°01'N 138°00'W. Sample 10 at 1000 fm (1829 m)

Collector: K. Hunkins, 31 July 1958

Plicifusus Dall 1902

Plicifusus johanseni Dall, 1919:21A, pl 3.

PARATYPE NMC 4117 (dry, damaged)

Locality: Sandspit at Point Barrow, Alaska, USA, Sta. 24

Collector: F. Johansen (Canadian Arctic Expedition 1913-18) 22-23 August 1913

Remarks: Dall wrote that he also examined a specimen of this species in the USNM (collected at Icy Cape, Alaska).

MELONGENIDAE

Melongena Schumacher 1817

Melongena corona johnstonei Clench & Turner, 1956a:178, pls 96, 105.

PARATYPES NMC 23153 (6 dry)

Locality: Gulf Shores (Mobile Bay) Alabama, USA

Collector: Mr. & Mrs. Harry I. Johnstone

Remarks: Holotype in MCZ.

OLIVIDAE

Oliva Bruguière 1879

Oliva rejecta Burch & Burch, 1962:165, pl 17.

PARATYPE NMC 12960 (1 dry)

Locality: La Paz, Baja California, Mexico

Collector: R.L. Burch, 1967

Remarks: Holotype in CAS. Keen (1971:624) synonymized this with *Oliva (Oliva) spicata* (Röding).

TURRIDAE

Lora Gray 1847

Lora cancellata canadensis (Whiteaves, 1901):197 [as *Bela cancellata var. canadensis*].

SYNTYPE NMC 90 (1 dry)

Locality: Murray Bay, Quebec

Collector: Sir J.W. Dawson, 1879

Remarks: Whiteaves credited Verrill & Bush with naming this subspecies (unpublished *ms*). No type locality was specified but specimens from the above locality and one other were used for the determination. It was subsequently synonymized with *Propebela cancellata* (Mighels & Adams) by Abbott (1974:284).

Lora maurellei (Dall & Bartsch, 1910):10, pl I fig. 5 [as *Bela maurellei*].

HOLOTYPE NMC 1375 (dry)

Locality: Sta. 28a, near Ucluelet (Barkley Sound) Vancouver Island, British Columbia. Depth 9 fm (16 m)

Collector: J. Macoun, May-August 1909

Remarks: Oldroyd (1927a:99) recorded it as *Lora maurellei*.

Mangelia Risso 1826

Mangelia arteaga Dall & Bartsch, 1910:11, pl II fig. 4.

HOLOTYPE NMC 1378 (dry)

PARATYPES NMC 1379 (28 dry)

Locality: Sta. 33a, Ucluelet to Amphitrite Point, Vancouver Island, British Columbia. Depth 8-34 fm (14-62 m)

Collector: John Macoun, May-August 1909

Remarks: Misspelled as *Mangilia* in publication. Keen (1971:754) referred this species to *Kurtzia*, and noted that it is the type of the genus *Kurtzia* Bartsch, 1944.

Mangelia hecetae Dall & Bartsch, 1910:10, pl I fig. 6.

HOLOTYPE NMC 1381 (dry)

PARATYPES NMC 1382 (2 dry)

Locality: Sta. 33b, Ucluelet to Amphitrite Point, Vancouver Island, British Columbia

Collector: John Macoun, May-August 1909

Remarks: Misspelled as *Mangilia* in publication. Synonym of *Kurtziella plumbea* (Hinds) according to Keen (1971: 747).

SUBCLASS OPISTHOBRANCHIA
ORDER ENTOMOTAENIATA

PYRAMIDELLIDAE

Melanella Bowditch 1822

Melanella orphanensis Clarke, 1974:14, fig. 5.

HOLOTYPE NMC 66345 (dry)

Locality: Sta. 6, Labrador Sea on Orphan Knoll, 50°32.9'N 46°22.0'W. Dredged at 961 fm (1757 m)

Collector: Brian T. Kidd on USS "Lynch", 23 May 1971.

Odostomia Fleming 1817

Odostomia (Evalea) barkleyensis Dall & Bartsch, 1910:19, pl II fig. 8.

SYNTYPES NMC 1437 (2 dry)

Locality: Barkley Sound, Vancouver Island, British Columbia. Depth 18-28 fm (32-51 m)

Collectors: C.H. Young & W. Spreadborough, May-August 1909.

Odostomia (Evalea) cassandra Bartsch, 1912:285, pl 38 fig. 5.

LECTOTYPE NMC 1610 (dry)

Locality: Skidegate, Queen Charlotte Islands, British Columbia. Dredged at Sta. 3

Collector: W. Spreadborough, June 1910

Remarks: This specimen was designated as lectotype by Corgan (1959:71) and assigned to subgenus *Odostomia*. He commented that this was again described as a new species by Dall & Bartsch (1913:142, pl 10 fig. 2) apparently using the same illustration of this shell.

Odostomia (Evalea) cypria Bartsch, 1912:282, pl 37 fig. 9.

HOLOTYPE NMC 1607 (dry)

Locality: Skidegate, Queen Charlotte Islands, British Columbia. Dredged at Sta. 99k

Collector: W. Spreadborough, June 1910

Remarks: Unique type. Again described as a new species by Dall & Bartsch (1913:143).

Odostomia (Evalea) quadrae Dall & Bartsch, 1910:17, pl 2 fig. 6.

SYNTYPES NMC 1440 (14 dry)

Locality: At Ship Channel (Newcombe Channel), Vancouver Island, British Columbia. Depth 18-28 fm (32-51 m)

Collectors: C.H. Young & W. Spreadborough, May-August 1909.

Odostomia (Evalea) hypatia Bartsch, 1912:282, pl 37 fig. 5.

HOLOTYPE NMC 1606 (dry)

Locality: Skidegate, Queen Charlotte Islands, British Columbia. Dredged at Sta. 1a

Collector: W. Spreadborough, June 1910

Remarks: Unique type.

Odostomia (Evalea) skidegatensis Bartsch, 1912: 284, pl 38 fig. 7.

SYNTYPES NMC 1609 (2 dry)

Locality: Skidegate, Queen Charlotte Islands, British Columbia. Dredged at Sta. 5

Collector: W. Spreadborough, June 1910

Remarks: Additional specimens were collected at Sta. 4 and Sta. 1 but only the above and one specimen at the USNM were described as "co-types".

Odostomia (Evalea) spreadboroughi Dall & Bartsch, 1910:17, pl 2 fig. 2.

SYNTYPES NMC 1435 (2 dry)

Locality: At Ship Channel (Newcombe Channel), Barkley Sound, Vancouver Island, British Columbia. Dredged in 18-28 fm (32-51 m)

Collectors: C.H. Young & W. Spreadborough

Remarks: One other syntype collected is in the USNM.

Odostomia (Evalea) vancouverensis Dall & Bartsch, 1910:18, pl 2 fig. 7.

SYNTYPES NMC 1434 (dry)
NMC 1434a (2 dry)

Locality: At Ship Channel (Newcombe Channel), Barkley Sound, Vancouver Island, British Columbia

Collectors: C.H. Young & W. Spreadborough, May-August 1909

Remarks: It is probable that NMC 1434 is the holotype and NMC 1434a the two paratypes separated by the authors. Oldroyd (1927b:211) wrote "Type in . . . Museum, Ottawa", implying that a holotype had been selected.

Odostomia (Evalea) youngi Dall & Bartsch, 1910:16, pl 2 fig. 1.

SYNTYPE NMC 1436 (1 dry)

Locality: Ship Channel (Newcombe Channel), Barkely Sound, Vancouver Island, British Columbia. Dredged in 18-20 fm (32-36 m)

Collectors: C.H. Young & W. Spreadborough, May-August 1909

Remarks: The other "co-type" is reported to be in the USNM. Both Oldroyd (1927b:211) and LaRocque (1953: 151) recorded 1912 as the publication date but this species was described earlier in 1910.

Turbonilla Risso 1826

Turbonilla (Pyrgisus) hecuba Dall & Bartsch, 1913:141, pl 10 fig. 6.

HOLOTYPE NMC 1779 (dry)

Locality: Barrington Passage, Nova Scotia. At Sta. 30a in 19 fm (34 m)

Collector: C.H. Young, June 1910

Remarks: Unique specimen.

Turbonilla (Pyrgolampros) macouni Dall and Bartsch, 1910:15, pl 1 fig. 9.

SYNTYPES NMC 1427 (3 dry)

Locality: Barkely Sound, Vancouver Island, British Columbia

Collectors: C.H. Young & W. Spreadborough, 1909

Remarks: The subgenus was printed as *Pyrogolampros* in error.

Turbonilla (Pyrgolampros) pesa Dall & Bartsch, 1910:14, pl 2 fig. 5.

HOLOTYPE NMC 1428 (dry)

Locality: Barkley Sound, Vancouver Island, British Columbia

Collectors: C.H. Young & W. Spreadborough, May-August 1909

Remarks: Unique specimen.

Turbonilla (Pyrgolampros) rinella Dall & Bartsch, 1910:14, pl 1 fig. 2.

HOLOTYPE NMC 1429 (dry)

Locality: Barkley Sound, Vancouver Island, British Columbia

Collectors: C.H. Young & W. Spreadborough

Remarks: Unique specimen.

Turbonilla (Pyrgolampros) talma Dall & Bartsch, 1910:13, pl 2 fig. 3.

HOLOTYPE NMC 1426 (dry)

Locality: Barkley Sound, Vancouver Island, British Columbia

Collectors: C.H. Young & W. Spreadborough, May-August 1909

Remarks: The only other specimen collected is in the USNM. In their contents, list of illustrations and introduction, Dall & Bartsch (1910) gave the name as *T. talama* but the heading of the species description was *T. talma*. It would seem that *T. talama* was the name intended by Dall & Bartsch and this appeared on the original museum label.

ORDER THECOSOMATA

CAVOLINIIDAE

Styliola Gray 1850

Styliola sinecosta Wells, 1974:293, 3 figs.

HOLOTYPE NMC 69251 (in alcohol)

PARATYPES NMC 69252 (3 in alcohol) 27 July 1972
69253 (1 in alcohol) 11 November 1972
69254 (1 in alcohol) 3 March 1973
69255 (1 in alcohol) 21 March 1973
69256 (3 in alcohol) 28 June 1971

Locality: 5 km W of Holetown, Barbados, W.I., 13°11'N 59°41'W

Collector: Fred E. Wells, 27 July 1972.

ORDER SACOGLOSSA

JULIIDAE

Berthelinia Crosse 1875

Berthelinia chloris belvederica Keen & Smith, 1961:47, pl 5 figs. 1-33.

PARATYPES NMC 11179 (2 dry)

Locality: Puerto Ballandra Bay near LaPaz, Baja California, Mexico

Collector: Allyn G. Smith

Remarks: Synonymized with *Berthelinia (Edenttellina) chloris* (Dall) by Keen (1971:817).

ORDER NUDIBRANCHIA

POLYCERATIDAE

Polycera Cuvier 1817

Polycera tricolor Robilliard, 1971:235, 1 pl 9 figs. 1 tab.

PARATYPE NMC 54891 (1 in alcohol)

Locality: Bamfield, Barkley Sound, British Columbia. Depth 15-25 ft (4-7 m), spawning on brown algae

Collector: G.A. Robilliard, 2 August 1969

Remarks: A colour slide of the live animal was provided with the paratype specimen. This is an excellent accessory as the colours of nudibranchs fade rapidly in preservative.

DENDRONOTIDAE

Dendronotus Alder & Hancock 1845

Dendronotus albopunctatus Robilliard, 1972:422, pl 1 figs. 1-7.

PARATYPES NMC 62902 (2 in alcohol)

Locality: East Sound, Orcas Island, Washington, USA. Depth 40 inches (101 cm) on mud

Collector: Cleave Vandersluys, 1971

Remarks: NMC 62903 includes 3 colour transparencies of the live animal and a microscope slide of the radula.

Dendronotus diversicolor Robilliard, 1970:<.70, p. 64 figs. 35, 36; text figs. 4-6, 25-28.

PARATYPES NMC 46423 (2 in alcohol)

Locality: Cantilever Pier, Friday Harbour Laboratories, San Juan Island, Washington, USA. On rocks at 90 foot (27 m) depth

Collector: Gordon A. Robilliard, 4 February 1968.

SUBCLASS PULMONATA
ORDER BASOMMATOPHORA

SIPHONARIIDAE

Siphonaria Sowerby 1824

Siphonaria sirius Pilsbry, 1894:9.

PARATYPES NMC 7257 (15 dry)

Locality: Sagami, Japan

Collector: Frederick Stearns, 1892

Remarks: The collector's name did not appear on the museum label.

CLASS SCAPHOPODA

SIPHONODENTALIIDAE

Cadulus Philippi 1844

Cadulus aberrans Whiteaves, 1887:124, fig. 2.

SYNTYPES NMC 555A (1 dry), NMC 555 (23 dry)

Locality: Forward Inlet, Vancouver Island, British Columbia. Depth 10-20 fm (18-36 m)

Collector: G.M. Dawson, 31 August 1885

Remarks: Dr. W.K. Emerson (pers. comm.) examined these specimens and selected NMC 555A as the lectotype but this information has not been published.

CLASS PELECYPODA
ORDER NUCULOIDA

NUCULIDAE

Nucula Lamarck 1799

Nucula zophos Clarke, 1960:5, pl 1 figs. 15-18.

PARATYPE NMC 3916 (1 left valve, dry)

Locality: Arctic Ocean, 800 ± mi (1291 km) N of Point Barrow, Alaska, USA, 84°16'N 149°11'W. Depth 907 fm (1658 m)

Collector: K. Hunkins, 12 June 1958

PARATYPES NMC 3917 (11 valves, dry)

Locality: 85°01'N 138°00'W. Depth 1000 fm (1289 m). 31 July 1958

PARATYPES NMC 3937 (62 valves, dry)

Locality: 84°28'N 148°28'W. Depth 924-934 fm (1689-1708 m). 16 June 1958.

Pronucula Hedley 1902

Pronucula benguelana Clarke, 1961:368, pl 3 figs. 9, 11.

PARATYPES NMC 37922 (22 in alcohol)
NMC 20034 (4 dry)

Locality: Cape Basin about 400 mi (645 km) NW of Capetown, South Africa, 30°14.9'S 13°03'E. Depth 1703 fm (3114 m)

Collector: "Lamont Geological Observatory" R/V "Vema", trawl 14, 1958

Remarks: Holotype in MCZ.

NUCULANIDAE

Nuculana Link 1807

Nuculana penderi (Dall & Bartsch, 1910):9, pl I figs. 3, 4 [as *Leda penderi*].

HOLOTYPE NMC 1285 (dry)

PARATYPES NMC 1286 (30 dry)

Locality: Sta. 38, b, c, Barkley Sound, Vancouver Island, British Columbia. Depth 8-36 fm (14-65 m)

Collector: John Macoun, 1909.

Portlandia Mörch 1857

Portlandia collinsoni (Dall, 1919):19A, pl 2 figs. 3, 4 [as *Leda (Portlandia) collinsoni*].

SYNTYPES NMC 4150
NMC 4151 (41 dry)

Locality: Sta. 27s, off Collinson Point, Alaska, USA. Depth 3 fm (5 m)

Collector: F. Johansen (Canadian Arctic Expedition), 3 October 1913

Remarks: This has been referred to genus *Yoldia* but is currently considered to be *Portlandia collinsoni* (see Abbott, 1974:418). Dall referred to these catalogue numbers as comprising "types" and "co-types"; the catalogue entry shows 1 specimen for no. 4150 (the holotype?) but unfortunately all specimens have been combined in one vial.

MALLETIIDAE

Malletia Des Moulins 1832

Malletia abyssopolaris Clarke, 1960:7, pl I figs. 19-22.

PARATYPES NMC 3893 (4 valves, dry)

Locality: Arctic Ocean, approximately 800 mi (1291 km) N of Point Barrow Alaska, USA, 83°59'N 151°44'W. Sample 2 at 1370 fm (2505 m)

Collector: K. Hunkins, 27 April 1958

PARATYPES NMC 3894 (4 valves, dry)

Locality: 84°09'N 150°23'W. Sample 3 at 1364 fm (2494 m). 8 June 1958

PARATYPES NMC 3895 (9 valves, dry)

Locality: 85°01'N 138°00'W. Sample 10 at 1000 fm (1829 m). 31 July 1958

PARATYPES NMC 3896 (2 valves, dry)

Locality: 84°30'N 145°00'W. Sample 8 at 1257 fm (2299 m). 9 July 1958

PARATYPES NMC 3940 (15 valves, dry)

Locality: 84°28'N 148°28'W. Sample 6 at 924-934 fm (1689-1708 m). 16 June 1958

PARATYPES NMC 3943 (20 valves, dry)

Locality: 84°34'N 146°24'W. Sample 7 at 1208 fm (2209 m). 7 July 1958.

Malletia johnsoni Clarke, 1961:370, pl 2 fig. 6.

PARATYPES NMC 4737 (1 whole and 2 damaged in alcohol)
NMC 20026 (1 in alcohol)

Locality: Sta. 22, 175 mi (282 km) W of Banana, Democratic Republic of the Congo, 5°53.5'S 9°51.5'E. Depth 1675 fm (3063 m)

Collector: "Lamont Geological Observatory", R/V "Vema", 21 May 1957

Remarks: Holotype in MCZ.

Tindaria Bellardi 1875

Tindaria agathida (Dall, 1890):252, pl 13 fig. 10 [as *Malletia (Tindaria) agathida*].

PARATYPES NMC 3923 (2½ dry)

Locality: Sta. 2754, E of Tobago, West Indies. Depth 880 fm (1609 m)

Collector: "U.S. Fish Commission"

Remarks: Holotype in USNM.

Tindaria (Clencharia) diaphana Clarke, 1961:374, pl 1 fig. 2.

PARATYPES NMC 4741 (2 in alcohol)

Locality: Sta. 52, about 800 mi (1291 km) SW of Capetown, South Africa, in Agulhas Basin, 41°03'S 07°49'E. Depth 2711 fm (4958 m)

Collector: "Lamont Geological Observatory", R/V "Vema", 1957

Remarks: Holotype in MCZ.

ORDER PTERIOIDA

PECTINIDAE

Cyclopecten Verrill 1897

Cyclopecten carlottensis Bernard, 1968:1509, figs. 1, 2.

HOLOTYPE NMC 46246 (dry)

Locality: Off Moresby Island, Queen Charlotte Islands, British Columbia, 52°59'00"N 133°06'00"W. Depth 1650 m

Collector: "Fisheries Research Board" Station No. 66-76, 20 October 1966.

Aequipecten Fischer 1886

Aequipecten irradians sablensis Clarke, 1965:175, pl 1 figs. 1-6.

HOLOTYPE NMC 14153A (left valve, dry)

PARATYPES NMC 14153 (41 valves, dry)

Locality: Sable Island, Nova Scotia

Collector: Mrs. Fred Andrewschuk, 1962

PARATYPES NMC 14464 (5 left valves, dry)

Collector: A.W. Mansfield, 3 February 1963

Remarks: An extinct subspecies.

Delectopecten Stewart 1930

Delectopecten vancouverensis (Whiteaves, 1893): 133, pl 1 figs. 1, 1a [as *Pecten (Pseudamusium) vancouverensis*].

HOLOTYPE NMC 422 (dry, containing body)

Locality: Forward Inlet (Quatsino Sound), Vancouver Island, British Columbia. Depth 10-20 fm (18-36 m)

Collector: G.M. Dawson, 31 August 1885

Remarks: This specimen was discovered in the NMC collection labelled *Pecten alaskensis* Dall, as it was originally identified by Whiteaves (1887:119) in the report of Dawson's collections for 1885. His subsequent re-examination resulted in the determination *P. (P.) vancouverensis*. All the details of Whiteaves' description (including measurements) identify this as the holotype, a unique specimen. Stewart (1930:11) designated this species as the type of the subgenus *Delectopecten*. Keen (1971:89) and other authors raised the status to genus.

Pseudamussium Morch 1853

Pseudamussium andersoni Dall, 1919:19A, pl II figs. 7, 8 [as *Pseudamusium andersoni*].

SYNTYPES NMC 4235 (1 & 2 dry)
NMC 4236 (many, dry)

Locality: Sta. 43a, Dolphin & Union Strait, NWT. Depth 50 fm (91 m)

Collector: Fritz Johansen (Canadian Arctic Expedition) 13 September 1915

Remarks: Although noting that earlier authors considered this species a synonym of *"Pecten" binominatus* Hanna, 1924, Grau (1959:55) determined these specimens to be *Cyclopecten greenlandicus* (Sowerby). Both these species were synonymized with *Arctinula greenlandica* (Sowerby) by Bernard (1979b:29, fig. 42).

LIMIDAE

Limatula Wood 1839

Limatula louiseae Clarke, 1974:16, fig. 9.

HOLOTYPE NMC 66418 (in alcohol)

Locality: Sta. 9, Labrador Sea, 51°06.6'N 37°47.3'W. Depth 1918 fm (3508 m)

Collector: Brian T. Kidd on USS "Lynch", 29 May 1971.

Limatula saturna Bernard, 1978:71, figs. 8, 17.

HOLOTYPE NMC 77088 (dry)

Locality: Scallop Survey Sta. 133, off Saturna Island, Strait of Georgia, British Columbia, 48°48.2'N 123°13.2'W. Depth 13 m

Collector: D.B. Quayle (Fisheries Research Board, Canada) May 1960.

Limatula vancouverensis Bernard, 1978:72, figs. 9, 18.

HOLOTYPE NMC 77087 (dry)

Locality: Fisheries Research Board. Sta. 64-209, W of Brooks Peninsula, Vancouver Island, British Columbia, 50°25.7'N 129°11.0'W. Depth 2013 m

Collector: D.B. Quayle (Fisheries Research Board, Canada) September 1964.

ORDER VENEROIDA

VESICOMYIDAE

Calyptogena Dall 1891

Calyptogena (Archivesica) kilmeri Bernard, 1974:17, text figs. 1-4.

HOLOTYPE NMC 69293 (dry)

Locality: Fisheries Research Board Sta. 67-50, off W coast Moresby Island, Queen Charlotte Islands, British Columbia, 53°1.0'N 132°56.0'W. Depth 1170 m

Collector: D.B. Quayle, 18 August 1967.

THYASIRIDAE

Thyasira Lamarck 1818

Thyasira dunbari Lubinsky, 1976:1667, pl 1 figs. 1-6.

HOLOTYPE NMC 75803 (dry)

PARATYPES NMC 75804 (13 dry)

Locality: Hole-in-Fog Bay, Isachsen, Ellef Ringnes Island, NWT, 78°47'N 103°32'W. Depth 12.5 m

Collector: S.D. MacDonald, 14 July 1954.

Axinulus Verrill & Busch 1898

Axinulus careyi Bernard, 1979b:33, fig. 50.

PARATYPE NMC 77001 (1 dry)

Locality: Western Beaufort Sea, Arctic Alaska, USA. Sta. SMG 950, 71°14.3'N 149°22.9'W. Depth 695 m

Collector: "Oregon State University", 5 September 1971

Remarks: Holotype in LACM.

MONTACUTIDAE

Aligena Lea 1846

Aligena (Odontogena) borealis Cowan, 1964:108, pl 20.

PARATYPE NMC 23152 (1 dry) (Cowan No. 4762)

Locality: Georgia Strait, British Columbia, 49°15'N 124°15'W. Depth 190 fm (347 m)

Collector: I.M. Cowan, 18 May 1963

Remarks: Holotype in Stanford Univ. Paleontology type collection, which is now at CAS. This species is the type of the subgenus *Odontogena*, by original designation.

Boreacola Bernard 1979

Boreacola vadosa Bernard, 1979b:37, fig. 56.

PARATYPE NMC 77002

Locality: Western Beaufort Sea, Arctic Alaska, USA. Sta. M12 at Pitt Point, 70°55'44"N 153°12'44"W. Depth 0.5 m

Collector: "Western Washington State College", 20 August 1976

Remarks: This is also the type species of the genus *Boreacola* Bernard (1979b:36, fig. 54). Holotype in LACM.

CARDIIDAE

Nemocardium Meek 1876

Nemocardium richardsoni (Whiteaves, 1878):468 [as *Cardium Richardsoni*].

HOLOTYPE NMC 241 (dry)

Locality: Gulf (= Strait) of Georgia, between Victoria Harbour and Race Island Lighthouse, British Columbia. Depth 30-50 fm (54-91 m)

Collector: James Richardson, 1875

Remarks: A unique specimen. This species was synonymized with *N. centifilosum* (Carpenter) by Abbott (1974:485).

TELLINIDAE

Macoma Leach 1819

Macoma carlottensis Whiteaves, 1880:196B, text fig. 1.

LECTOTYPE NMC 316 (dry)

PARALECTO-TYPES NMC 40577 (12 dry)

Locality: Virago Sound, Graham Island, Queen Charlotte Islands, British Columbia

Collector: G.M. Dawson, 1878

Remarks: The lectotype was designated by Eugene V. Coan (1971:35).

Macoma elimata Dunnill & Coan, 1968:1, figs. 2a-e, 3.

HOLOTYPE NMC 46070 (dry)

Locality: North end of Moresby Island, Satellite Channel, Vancouver Island, British Columbia, 48°44'N 123°19'W. Depth 49 m

Collector: Robert M. Dunnill, 7 June 1967

Remarks: An error in the publication gives the longitude as 120°19'W. All specimens from type locality.

PARATYPES NMC 46444 (3 dry) in 73 m, 28 June 1967
NMC 46445 (3 dry) in 29 m, 27 June 1967
(2 dry) in 57 m, 27 June 1967

Macoma oneilli Dall, 1919:20A, pl 2 fig. 1.

LECTOTYPE NMC 4240 (dry)

PARALECTO-TYPE NMC 40576 (right valve, dry)

Locality: Sta. 43a Dolphin & Union Strait, NWT. Depth 91 m

Collector: F. Johansen (Canadian Arctic Expedition), September 1915

Remarks: The original lot had one specimen complete and one valve and from these, E.V. Coan (1971:28) designated the lectotype and paralectotype as indicated.

DONACIDAE

Donax Linnaeus 1758

Donax dorotheae Morrison, 1971:554.

PARATYPES NMC 60302 (31 dry)

Locality: Grand Isle, Louisiana, USA

Collector: J.P.E. Morrison, 3 January 1970.

ORDER MYOIDA

PHOLADIDAE

Penitella Valenciennes 1846

Penitella turneri Evans & Fisher, 1966:222, 3 figs.

PARATYPES NMC 42713 (2 dry)

Locality: North end of Fossil Point in Coos Bay, Oregon, USA, 43°22'N 124°15'W

Collector: John W. Evans, summer 1965

Remarks: The holotype is in the CAS.

ORDER SEPTIBRANCHOIDA

POROMYIDAE

Poromya Forbes 1844

Poromya (Dermatomya) canadensis Bernard, 1969:2232, fig. 4.

HOLOTYPE NMC 46460 (dry)

Locality: North Pacific Ocean, 48°02'N 125°45'10"W. Depth 534 fm (976 m)

Collector: F.R. Bernard (Fisheries Research Board), 6 September 1964.

CUSPIDARIIDAE

Cuspidaria Nardo 1840

Cuspidaria (Cuspidaria) cowani Bernard, 1967:2629, figs. 1-3.

HOLOTYPE NMC 45651 (dry)

Locality: FRB Sta. 66-70, off Moresby Island, Queen Charlotte Islands, British Columbia, 52°30'N 131°55'W. Depth 1318 m

Collector: F.R. Bernard (Fisheries Research Board), 17 October 1966.

Cuspidaria filatovae Bernard, 1979:14, fig. 1.

PARATYPE NMC 77415 (1 dry)

Locality: West of Newport, Oregon, USA at 45°01.1'N 135°13.6'W. Depth 3932 m

Collector: Sta. BMT 308, "Oregon State University", 10 October 1972.

Cuspidaria variola Bernard, 1979:16, fig. 2.

PARATYPE NMC 77416 (1 dry)

Locality: West of Newport, Oregon, USA at 45°01.6'N 127°31.0'W. Depth 2850 m

Collector: Sta. BMT 336, "Oregon State University", 5 December 1973.

FRESHWATER AND TERRESTRIAL SPECIES

SUBLCASS PROSOBRANCHIA

ORDER MESOGASTROPODA

VIVIPARIDAE

Viviparus Montfort 1810

Viviparus contectoides goodrichi Archer, 1833:19, pl 3 figs. 1-3.

PARATYPES NMC 7272 (3 dry)

Locality: Tributary to Chipola River, 5 mi (8 km) NE of Marianna Jackson County, Florida, USA

Collector: O.C. van Hyning, 16 November 1932

Remarks: Holotype in MCZ.

VALVATIDAE

Valvata Muller 1774

Valvata lewisi mccolli LaRocque, 1932:199, 1 pl figs. 1a-3c.

HOLOTYPE NMC 22840 (LaRocque No. 7392)

PARATYPES NMC 45807 (2) (LaRocque No. 7932 a, b)

Locality: Shallow Lake, Grey County, Ontario. In marl of late Wisconsinian age (Pleistocene)

Collector: W.R. McColl

Remarks: Clarke (1973:225) synonymized this with *Valvata sincera ontariensis* Baker.

Valvata perdepressa walkeri F.C. Baker, 1930:188, fig. 1.

PARATYPES NMC 3229 (6 dry)

Locality: Shore of Lake Michigan, Chicago, Illinois, USA

Collector: A.R. Cahn.

Valvata piligera yukonensis Clarke & Harington, 1978:47, figs. A & B.

PARATYPES NMC 86126 (1 dry) (loc. 28)
NMC 86127 (1 dry) (loc. 27W)
NMC 86128 (2 dry) (loc. 44)

Locality: Old Crow River, Yukon Territory. Harington's localities: 28 — 68°10'N 139°56'W, directly upstream from the mouth of Timber Creek. 27W — 68°10'N 139°57'W, W bank directly downstream from the mouth of Timber Creek. 44 — 68°13'N 140°00'30"W, NE bank; upstream end

Collectors: C.R. Harington, G.R. Fitzgerald & C. Thomas, summer 1975

Remarks: Holotype in USNM. Specimens from reworked deposits, more than 54,000 years old (radiocarbon dates), of Sangamon interglacial age.

Valvata winnebagoensis F.C. Baker, 1928:475, pl 1 figs. 11-13.

PARATYPES NMC 6831 (9 dry)

Locality: Lake Winnebago, Wisconsin, USA

Collector: F.C. Baker

Remarks: Label marked "ex Type Lot 14".

HYDROBIIDAE

Cincinnatia Pilsbry 1891

Cincinnatia cincinnatiensis chicagoensis F.C. Baker, 1930:189, fig. 2 (12-15).

PARATYPES NMC 3206 (6 dry)

Locality: Shore of Lake Michigan, Chicago, Illinois, USA

Collector: A.R. Cahn

Remarks: Holotype in the University of Illinois.

Cincinnatia emarginata canadensis F.C. Baker, 1928:131, text figs. 54:7, 8.

PARATYPES NMC 25960 (300 dry)

Locality: South shore of Lake Kakisa, near mouth of Kakisa River, NWT, Loc. 5

Collector: E.J. Whittaker, 1924

Remarks: This is the type species by original designation of *Vancleavia* Baker, 1930. Clarke (1973:250) synonymized this species with *Probythinella lacustris* (Baker, 1928) and commented that Baker's published type locality "Lake Kakisa near mouth of Beaver River . . ." is probably an error. (The original label shows the type locality given here).

Amnicola Gould & Haldeman *in* Haldeman 1840

Amnicola walkeri Pilsbry, 1898:43.

PARALECTO-TYPE NMC 42957 (1 dry)

Locality: Lake Michigan at High Island Harbour, Beaver Islands, Michigan, USA. Depth 10 m

Collector: —

Remarks: A lectotype designated by H.B. Baker (1964:178) is in the ANSP.

PLEUROCERIDAE

Goniobasis Lea 1862

Goniobasis angustispira (Anthony, 1860):55 [as *Melania angustispira*].

PARATYPES NMC 7356 (5 dry)

Locality: Tennessee, USA

Collector: J.G. Anthony

Remarks: Holotype in MCZ.

Goniobasis columbiensis Whiteaves, 1905:61, pl 2 figs. 11-12.

SYNTYPES NMC 2042 (26 dry)

Locality: Headwaters of Columbia River at Upper Columbia Lake in East Kootenay District, British Columbia

Collector: J.B. Tyrrell, 1883

Remarks: Of the original type lot of 37 specimens (as marked on the box) 26 remain. This species has been synonymized with *Goniobasis livescens* Menke by most authors.

Goniobasis dickinsoni Clench and Turner, 1956b: 141, pl 2 fig. 10.

PARATYPES NMC 6321 (9 dry)

Locality: Holmes Creek, 1 mi (1.6 km) W of Graceville, (Jackson County) Florida, USA

Collector: "Harvard-University of Florida Exped.", 11 September 1954

Remarks: Holotype in MCZ.

Goniobasis ozarkensis Call, 1886:189, pl 7 figs. 1-10.

PARALECTO-TYPES NMC 45425 (many dry)

Locality: Blue Spring, Shannon County, Missouri, USA

Collector: R.E. Call, 27 June 1886

Remarks: Lectotype in MCZ (specimen in fig. 2 of original publication) selected by R.I. Johnson (1975:142).

MELANIIDAE

Melania Lamarck 1799

Melania bicincta Anthony, 1860:56.

SYNTYPES NMC 7266 (4 dry)

Locality: Tennessee (North Carolina) USA

Collector: J.G. Anthony.

Melania elegantula Anthony, 1854:103, pl 3 fig. 2.

PARATYPES NMC 7267 (4 dry)

Locality: Kentucky, USA

Collector: J.G. Anthony

Remarks: Holotype in MCZ. Placed in synonymy of *Lithasia obovata* Say by Goodrich (1929:6).

Melania eliminata Anthony, 1954:97, pl 2 fig. 15.

PARATYPES NMC 7255 (10 dry)

Locality: Near Owenboro, Kentucky, USA

Collector: J.G. Anthony.

Melania eximia Anthony, 1854:107, pl 3 fig. 7.

PARATYPES NMC 7265 (2 dry)

Locality: Tennessee, USA

Collector: J.G. Anthony

Remarks: Holotype in MCZ.

Melania gracilis Anthony, 1842: outside back cover of no. 4.

PARATYPES NMC 7268 (5 dry)

Locality: Congress Lake, Stark County, Ohio, USA

Collector: ? J.G. Anthony

Remarks: Holotype in MCZ. Anthony (1854: 129, pl 2 fig. 5) redescribed *M. gracilis* Anthony (preoccupied by *M. gracilis* Lea) and renamed it *M. gracilior*.

Melania inorata Anthony, 1850:360.

PARATYPES NMC 7254 (3 dry)

Locality: Maumee River, Lorraine County, Ohio, USA

Collector: J.G. Anthony

Remarks: Holotype in MCZ.

Melania planospira Anthony, 1854:123, pl 3 fig. 24.

PARATYPES NMC 7264 (4 dry)

Locality: Kentucky, USA

Collector: J.G. Anthony

Remarks: Placed in synonymy of *Lithasia obovata* (Say) by Goodrich (1929:7).

Melania viridula Anthony, 1854:84, pl 2 fig. 2.

SYNTYPES NMC 7252 (6 dry)

Locality: Tennessee, USA

Collector: J.G. Anthony

Remarks: "Co-types" also in MCZ.

Io Lea 1831

Io brevis Anthony, 1860:69.

PARATYPES NMC 7277 (2 dry)

Locality: Tennessee River, Tennessee, USA

Collector: J.G. Anthony

Remarks: Holotype in MCZ.

SUBCLASS PULMONATA
ORDER BASOMMATOPHORA

CARYCHIIDAE

Carychium Müller 1774

Carychium magnificum Hanna, 1923:51, fig. 1.

PARATYPE NMC 3239 (1 dry)

Locality: Union Bay, Vancouver Island, British Columbia

Collector: G. Dallas Hanna

Remarks: Synonym of *C. occidentale* Pilsbry; see Pilsbry (1948:1060, fig. 567b). Holotype in CAS.

LYMNAEIDAE

Lymnaea Lamarck 1799

Lymnaea dalli Baker, 1907:125.

PARATYPE NMC 40410 (1 dry)

Locality: West side Lake James, Steuben County, Indiana, USA

Collector: V. Sterki

Remarks: Baker first determined these specimens as *Lymnaea parva* Lea but revised his identification as above. This species is now placed in *Bakerilymnaea* Weyrauch (Clarke, in press).

Stagnicola (Leach) Jeffreys 1833

Stagnicola emarginata kempi Baker & Cahn, 1931:53, pl 2.

SYNTYPES NMC 4377 (6 dry)

Locality: Bamaji Lake, N of Lake St. Joseph, Ontario

Collector: A.R. Cahn, summer 1929

Remarks: Now synonymized with *Stagnicola catascopium catascopium* Say. See Clarke (1973:329).

PLANORBIDAE

Helisoma Swainson 1840

Helisoma corpulentum multicostatum F.C. Baker, 1932:7. Figured in Baker, 1936: pl 1 figs. 14-20, pl 4 figs. 9-12, 21.

PARATYPES NMC 3216 (2 dry)

Locality: Kahnipiminanikok (= Kawnipi) Lake, Rainy River District, Ontario

Collector: A.R. Cahn, summer 1928

Remarks: Holotype in the Museum of Natural History, University of Illinois. Clarke (1973:471) determined that this subspecies is not valid: it is *H. corpulentum* s.str.

Helisoma corpulentum vermilionense F.C. Baker, 1929:131 [as *Helisoma corpulenta vermilionensis*]. Figured in Baker, 1936: pl 1 figs. 8-13; pl 4 figs. 5-8.

PARATYPES NMC 3220 (8 dry)

Locality: Vermilion Lake, St. Louis County, Minnesota, USA

Collector: F.C. Baker.

Helisoma infracarinatum F.C. Baker, 1932:8. Figured in Baker, 1936: pl 2 figs. 6-15, pl 4 figs. 15, 16, 20.

PARATYPES NMC 3222 (2 dry)

Locality: Basswood River Rapids, Rainy River District, (near International Boundary) Ontario

Collector: A.R. Cahn, 1931

Remarks: Later considered a subspecies, *Helisoma pilsbryi infracarinatum*, by Baker (1945:138, pl 25, 8-13; pl 56, 4-5).

Helisoma trivolvis macrostomum (Whiteaves, 1863):113, fig. 12 [as *Planorbis macrostomus*].

LECTOTYPE NMC 3869 (dry)

PARALECTO-TYPES NMC 3870 (2 dry)

Locality: Ponds near Toll Gate, Mile End, Montreal, Quebec

Collector: J.F. Whiteaves

Remarks: The type locality was drained long ago and has been built over. F.C. Baker (1936:19, pl 5, lower figure) designated the lectotype with an interesting commentary on the re-discovery of the type lot.

Helisoma trivolvis winslowi (F.C. Baker, 1926):116 [as *Planorbis trivolvis winslowi*].

PARATYPES NMC 3224 (4 dry)

Locality: Little Arbor Vitae Lake, Vilas County, Wisconsin, USA

Collectors: Metzelaar & Langlois, 19 September 1925

Remarks: Holotype in UMMZ.

Helisoma whiteavesi F.C. Baker, 1932:7. Figured in Baker, 1936:10, pl 2 fig. 1-5, pl 4 figs. 13, 14.

PARATYPES NMC 3223 (2 dry)

Locality: Lac des Mille Lacs (swamp), Thunder Bay District, western Ontario

Collector: A.R. Cahn, 1928.

Gyraulus Charpentier 1837

Gyraulus hornensis F.C. Baker, 1934:135, text fig. A.

PARATYPES NMC 21962 (15 dry)

Locality: Birch Lake, Horn River, Mackenzie River District, NWT

Collector: S.J. Whittaker, July 1921

Remarks: Synonymized with *Gyraulus deflectus* Say by Clarke (1973:391).

Gyraulus latistomus F.C. Baker, 1932:9.

PARATYPE NMC 3207 (1 dry)

Locality: McAree Lake, Rainy River District, western Ontario

Collector: A.R. Cahn, 1931

Remarks: Placed in synonymy of *Gyraulus parvus* Say by Clarke (1973:403).

PHYSIDAE

Physa Draparnaud 1801

Physa bottimeri Clench, 1924:12, fig. 4.

PARATYPE NMC 43303 (1 dry)

Locality: Comanche Spring, Fort Stockton, Texas, USA

Collector: L.J. Bottimer, 14 January 1922

Remarks: Holotype in UMMZ.

Physa gouldi Clench, 1935a:30. Figured by Clench in Nautilus 48(4), pl 7 fig. 5.

PARATYPES NMC 54870 (4 dry)

Locality: Mouse River, 6 mi (9 km) N of Towner, McHenry County, North Dakota, USA

Collector: Neal Weber, 1934

Remarks: Synonymized with *Physa gyrina* Say by Clarke (1973:373). The collector's name did not appear on the original label with these specimens.

Physa hordacea Lea 1864:116, and J. Acad. Nat. Sci. Philad. 2nd Ser. Vol. 6: pl 24 fig. 102.

PARATYPES NMC 55081 (7 dry)

Locality: Columbia River at Vancouver, Washington, USA

Collector: Sir George Simpson

Remarks: Lea's original description gives the "Habitat" as "Vancouver Island, Oregon". It has been suggested that at that time "Oregon" included Washington Territory and part of British Columbia. Dall (1905:107) stated that the types came from

Vancouver, Washington and not Vancouver Island, B.C. Subsequent authors believed the locality to be Vancouver Island, B.C. (LaRocque, 1953:301; Clarke, in press).

Physa jennessi Dall, 1919:20A, pl II fig. 2.

HOLOTYPE NMC 4020 (dry)

PARATYPES NMC 4019 (3 dry)

Locality: Ponds E of Bernard Harbour, NWT

Collector: D. Jenness (Canadian Arctic Expedition), July 1916.

Physa jennessi athearni Clarke, 1973:365, pl 24 figs. 4-6.

HOLOTYPE NMC 46384 (in alcohol)

PARATYPES NMC 32483 (30 in alcohol, 6 dry)

Locality: Horseshoe Lake about 10 mi (16 km) SE of Jasper, Alberta. Sta. HDA 58

Collector: H.D. Athearn, 21 July 1965.

Physa johnsoni Clench, 1926:2, pl 1.

PARATYPES NMC 11670 (2 dry)

Locality: Middle Spring, Hot Sulphur Springs, Banff, Alberta

Collector: O. Bryant.

Physa plena Clench, 1930:311, fig. 3.

PARATYPE NMC 14786 (1 dry)

Locality: Reed Spring, Centreville, Missouri, USA

Collector: P.S. Remington

Remarks: Holotype in MCZ.

ORDER STYLOMMATOPHORA

PARTULIDAE

Partula Ferussac 1819

Partula approximata 'Pease' Garrett, 1884.

PARATYPES NMC 7261 (4 dry)

Locality: SW Raiatea (Island), Society Islands

Collector: W.H. Pease

Remarks: Garrett (1884:75) synonymized this species with *P. vittata* Pease, but Pilsbry 1909-1910:243, pl 27 figs. 13-15) described it as *Partula fusca approximata* 'Pease' Garrett, 1884.

Partula auriculata Broderip, 1832:125. Illustrated in Reeve's Conch. Iconica, *Partula*, pl 2 fig. 11b.

PARATYPES NMC 7271 (5 dry)

Locality: Huaheine (Island), Society Islands. Found on bushes

Collector: "W.H. Pease collection".

Partula faba var. *subangulata* Pease, 1870:401.

PARATYPES NMC 7270 (6 dry)

Locality: Tahaa (Island), Society Islands

Collector: "W.H. Pease collection"

Remarks: Pilsbry (1909-1910:238) gave this variety specific rank as *Partula subangulata* Pease.

Partula imperforata 'Pease' Garrett, 1884:54, pl 3 fig. 53.

PARATYPES NMC 7276 (5 dry)

Locality: Hapai Valley, Raiatea Island, Society Islands

Collector: "W.H. Pease collection".

Partula lugubris Pease, 1864:672. Illustrated by Garrett 1884, pl 3 fig. 47.

PARATYPES NMC 7269 (7 dry)

Locality: Hapai Valley, Raiatea (Island), Society Islands

Collector: W.H. Pease.

Partula planilabrum Pease, 1864:672.

PARATYPES NMC 7263 (2 dry)

Locality: East coast of Tahaa (Island), Society Islands

Collector: "W.H. Pease collection".

Partula raiatensis Garrett ms.

PARATYPES NMC 7274 (2 dry)

Locality: Raiatea (Island), Society Islands

Collector: —

Remarks: Garrett (1884:54) described this as a variety of *P. imperforata* 'Pease' Garrett (see above).

Partula simulans Pease, 1866:202.

PARATYPES NMC 7273 (6 dry)

Locality: Moorea (Island), Society Islands

Collector: Garrett

Remarks: Crampton (1932:132) referred to this taxon as *P. taeniata simulans* Pease, in agreement with Garrett (1884:72) and stated that Garrett originally sent the specimens to Pease.

CERIIDAE (= CERIONIDAE)

Cerion Röding 1798

Cerion capraia (Maynard and Clapp, 1921):131, pl 28 figs. 7, 8 [as *Strophiops capraia*].

PARATYPES NMC 12082 (8 dry)

Locality: North Goat Key, Fresh Creek, Andros, Bahamas

Collector: —

Remarks: *In* Maynard 1913-1926, Appendix to Vol. 10. Clench (1957:132) recorded *Strophiops* as a subgenus.

Cerion cervina (Maynard and Clapp, 1920):121, pl 22 figs. 8, 9 [as *Strophiops cervina*].

PARATYPES NMC 12079 (11 dry)

Locality: Refuge Key, E of Norman's Pond Key, Bahamas

Collector: —

Remarks: *In* Maynard 1913-1926, Appendix to Vol. 10. See "Remarks" *C. capraia*.

Cerion christophei Clench, 1937b:24, pl 1 fig. 2.

PARATYPES NMC 12051 (6 dry)

Locality: Northeast Point (Christoph's Palace) Great Inagua, Bahamas

Collector: Greenway.

Cerion copia (Maynard, 1889):22, pl 1 figs. 1, 2, 7-12; pl 2 figs. 8, 8b [as *Strophia copia*].

PARATYPES NMC 45396 (17 dry)

Locality: West end of Cayman Brae, Cayman Islands

Collector: C.J. Maynard

Remarks: A synonym of *C. pannosum* (Maynard) in Pilsbry (1901:185). Genus *Strophia* is *Cerion*, see Clench (1957:135).

Cerion cyclura (Maynard & Clapp, 1920):119, pl 3 figs. 3-5 [as *Strophiops cyclura*].

PARATYPES NMC 12055 (10 dry)

Locality: Bitter Guana Key (Exuma Group) Bahamas

Collector: —

Remarks: *In* Maynard, 1913-1926, Appendix to Vol. 10. See "Remarks", *C. capraia*.

Cerion (Strophiops) fernandina Clench, 1937a:21, pl 3 fig. 5.

PARATYPES NMC 12037 (6 dry)

Locality: Millers, 8 mi (12 km) SE of Simms, Long Island, Bahamas

Collector: J.V. Malone, October 1936.

Cerion hughesi Clench, 1952:107, pl 15 figs. 1-3.

PARATYPES NMC 12108 (13 dry)

Locality: Sandy Point, Savana Sound, Eleuthra Island, Bahamas

Collector: W.J. Clench, April 1936.

Cerion iostomum moreleti Clench & Aguayo, 1951:73, pl 11 fig. 6.

PARATYPES NMC 12094 (8 dry)

Locality: Punta del Este, Isla de Pinos, Cuba

Collector: ? C. de la Torre

Remarks: Holotype in Museo Poey, Cuba.

Cerion (Strophiops) josephinae Clench, 1935b:49, pl 3 figs. 1, 4.

PARATYPES NMC 12052 (6 dry)

Locality: Tate's Bay, SE Long Island, Bahamas

Collector: Edith Johnson, 19 November 1923 (C.J. Maynard Collection).

Cerion (Strophiops) lucayanorum Clench, 1938b: 326, pl 25 fig. 2.

PARATYPES NMC 22251 (17 dry)

Locality: Mores Island, 32 mi (51 km) NW of Southwest Point, Great Abaco Island, Bahamas

Collector: —.

Cerion macularia (Maynard 1913):189 [as *Strophiops macularia*].

SYNTYPES NMC 12072 (15 dry)

Locality: South shore of New Providence, W side of the first sound, Bahamas

Collector: —

Remarks: *In* Maynard, 1913-1926, Appendix to Vol. 5. The original label is marked "co-types" and has the additional data "between Fox Hill and south shore, New Providence".

Cerion (Strophiops) malonei Clench, 1937a:20, pl 3 fig. 6.

PARATYPES NMC 12099 (7 dry)

Locality: 3½ mi (5.6 km) SE of Simms, Long Island, Bahamas

Collectors: H.D. Russell, R.A. McLean, J.H. Huntington & R.W. Foster, July 1936

Remarks: Holotype in MCZ.

Cerion marielinum dominicanum Clench & Aguayo, 1951:69, pl 10 figs. 1-3.

PARATYPES NMC 45429 (10 dry)

Locality: E side Boca del Rio Dominica, 10 km W of Mariel, Cuba

Collectors: C.G. Aguayo, W.J. Clench, L. Howell & R.D. Turner, June 1950

Remarks: Holotype in MCZ.

Cerion (Strophiops) mcleani Clench, 1937a:22, pl 3 fig. 7.

PARATYPES NMC 4935 (17 dry)

Locality: One mi (1.6 km) E of O'Neills, Long Island, Bahamas

Collectors: H.D. Russell, R.A. McLean, J.H. Huntington & R.W. Foster, July 1936

Remarks: Holotype in MCZ.

Cerion melanostomum Clench, 1934:212, pl 2 figs. a, c.

PARATYPES NMC 12078 (5 dry)

Locality: Mortimer's, S end of Long Island, Bahamas

Collectors: T. Barbour & Mr. & Mrs. J.C. Greenway, 6 March 1934

Remarks: Holotype in MCZ.

Cerion obtusa (Maynard & Clapp, 1921):132, pl 29 figs. 9, 20 [as *Strophiops obtusa*].

PARATYPES NMC 12074 (11 dry)

Locality: Cat Key, Berry Islands, Bahamas

Collector: —

Remarks: *In* Maynard, 1913-1926, Appendix to Vol. 10.

Cerion piraticus Clench, 1937c:64, pl 3 fig. 1.

PARATYPES NMC 12073 (5 dry)

Locality: (Southeast Point) 12 mi (19 km) SE of Abrahams Bay, Mariguana Island, Bahamas

Collector: — ?1936.

Cerion russelli Clench, 1938a:528, pl 1 figs. 5-8.

PARATYPES NMC 12084 (6 dry)

Locality: Turtle Cove, 4 mi (6.5 km) NNE of The Bight, central Cat Island, Bahamas

Collectors: W.J. Clench, H.D. Russell & J.H. Huntington, 1935.

Cerion torrei moralesi Clench & Aguayo, 1951:77, pl 11 figs. 13, 14.

PARATYPES NMC 45490 (11 dry)

Locality: Punta de Mulas, near Banes, Oriente, Cuba

Collectors: C.J. Aguayo, W.J. Clench & A. Quinones, 1945

Remarks: Holotype in Museo Poey, Cuba.

CLAUSILIIDAE

Steeriana Joussaume 1900

Steeriana (Steeriana) cajamarcana Weyrauch & Zilch, 1954. See Zilch 1954:73, taf. 5, fig. 8.

PARATYPES NMC 20619 (5 dry)

Locality: Hacienda Cochambul, near Cajamarcana, northern Peru. Altitude 2950 m

Collector: W. Weyrauch

Remarks: Holotype in Natur-Museums Senckenberg.

Temesa H. & A. Adams 1855

Temesa (Temesa) omissa Weyrauch, 1957:18, taf. 1, fig. 4.

PARATYPES NMC 20646 (5 dry)

Locality: Tarmatambo, near Tarma, central Peru. Altitude 3600 m

Collector: W. Weyrauch, December 1942

Remarks: Holotype in the Natur-Museums Senckenberg.

Temesa (Temesa) pilsbryi Weyrauch, 1956:146, taf. 11, figs. 1-4.

PARATYPES NMC 20647 (5 dry)

Locality: El Infiernillo, Rio Rimac, 90 km N of Lima on highway from Lima to Oroya, central Peru. Altitude 3360 m

Collector: W. Weyrauch

Remarks: Holotype in Natur-Museums Senckenberg.

Zilchiella Weyrauch 1957

Zilchiella grandiportus Weyrauch, 1957:10, taf. 1, figs. 5-10.

PARATYPES NMC 20651 (4 dry)

Locality: Pena Rota, Rio Llaucan, 8 km NE of Bambamarca, northern Peru. Altitude 2700 m

Collector: W. Weyrauch

Remarks: Holotype in the Senckenberg Museum. This is the type species of the genus (Weyrauch 1957:9).

SUCCINEIDAE

Catinella Pearse 1871

Catinella (Mediappendix) hubrichti Grimm, 1960:9, fig. 1, A-E; pl 1, F.

PARATYPES NMC 84599 (2 dry)

Locality: Near dump along Pokomoke River, WSW edge of Snow Hill, Worcester County, Maryland, USA. Among wet leaves and cypress needles on mud near small creek

Collector: F.W. Grimm, 27 December 1959

Remarks: Holotype in UMMZ.

Catinella (Mediappendix) pinicola Grimm, 1960:11, fig. 1, F-K; pl 1, C-E.

PARATYPE NMC 84635 (1 dry)

Locality: Near dump along Pokomoke River, WSW edge of Snow Hill, Worcester County, Maryland, USA

Collector: F.W. Grimm, 27 December 1959

Remarks: Holotype in UMMZ.

BULIMULIDAE

Bostryx Troschel 1847

Bostryx megomphalus Pilsbry, 1944:122, pl 11 figs. 15, 16.

PARATYPES NMC 20633 (5 dry)

Locality: Cerro Huayuncayo (near) Acobamba, Rio Tarma, central Peru. Altitude 3200 m

Collector: ? W. Weyrauch

Remarks: Holotype in ANSP.

UROCOPTIDAE

Holospira von Martens 1850

Holospira stenopylis Pilsbry, 1953:146 pl 8 figs. 3-3b.

PARATYPES NMC 9509 (3 dry)

Locality: Slopes on the N side of the valley NE of San Pedro, San Luis Potosi, Mexico

Collector: H.A. Pilsbry, 24 July 1934.

ENDODONTIDAE

Helicodiscus Morse 1864

Helicodiscus diadema Grimm, 1967:119, 1 pl, figs. A-E.

PARATYPES NMC 57699 (13 in alcohol, 116 dry)

Locality: Near quarry on highway US 220, 7.6 mi (12 km) NE of Covington city limits, Alleghany County, Virginia, USA

Collector: F.W. Grimm, 16 May 1966

Remarks: Holotype in USNM.

PHILOMYCIDAE

Pallifera Morse 1864

Pallifera (Pancalyptus) megaphallica Grimm, 1961:104, text fig. B.

PARATYPES NMC 56624 (18 in alcohol)

Locality: Near dump along Pocomoke River, WSW edge of Snow Hill, Worcester County, Maryland, USA

Collector: F.W. Grimm, 27 December 1959

Remarks: Holotype in ANSP. According to Hubricht (1974:33) this is *P. fosteri* F.C. Baker.

POLYGYRIDAE

Ashmunella Pilsbry & Cockerell 1899

Ashmunella mudgei Cheatum, 1971:107, figs. 1-4.

PARATYPES NMC 61542 (3 dry)

Locality: SW slope Sawtooth Mountain, Davis Mountain Range, Jeff Davis County, Texas, USA. Altitude 6,000 - 7,100 feet (1828-2164 m)

Collectors: R.W. Fullington, Hal Kirby & E.P. Cheatum, 17 November 1969

Remarks: Holotype in Dallas Museum of Natural History.

Ashmunella pasonis (Drake, 1951)a:44, figs. 1-4 [as *Polygyra pasonis*].

PARATYPES NMC 9148 (3 dry)

Locality: 3 mi (4.8 km) slightly NE of Vinton, El Paso County, Texas, USA

Collectors: Lloyd M. Pearson & Robert J. Drake, 30 January 1949

Remarks: Originally published as *Polygyra pasonis* but, in a later issue of the same journal, Drake (1952:30) corrected the generic name. Holotype in CAS.

Stenotrema Rafinesque 1819

Stenotrema burringtoni Grimm, 1971:14, fig. D.

HOLOTYPE NMC 61545 (dry)

PARATYPES NMC 61546 (7 dry)

Locality: 34 mi (54 km) S-SW of Mustoc on US 220, Highland County, Virginia, USA

Collector: F.W. Grimm, 16 May 1966

Remarks: Synonymized with *Stenotrema hirsutum* (Say) by Hubricht (1974: 34).

Stenotrema simile Grimm, 1971:12, fig. A.

HOLOTYPE NMC 61543 (dry)

PARATYPES NMC 61544 (2 dry)

Locality: Near sharp bend of Bear Creek, 2-9 mi (3-14 km) W of junction of highways US 219 and Maryland 42, Garrett County, Maryland, USA

Collectors: F.W. & G.F. Grimm, G.B. Morris, 30 August 1959.

Triodopsis Rafinesque 1819

Triodopsis fallax affinis Hubricht, 1954:28.

PARATYPES NMC 59842 (10 dry)

Locality: Waste ground, Huger and Richland Streets, Columbia, Richland County, South Carolina, USA

Collector: Leslie Hubricht, 1 March 1952

Remarks: Holotype in ANSP.

Triodopsis messana Hubricht, 1952:80 figured in H.A. Pilsbry, Land Mollusca of North America, Vol. 1(2) p. 810, fig. 480C.

PARATYPES NMC 59862 (8 dry)

Locality: Waste ground, Whiteville, Columbus County, North Carolina, USA

Collector: Leslie Hubricht, 23 December 1950

Remarks: Holotype in ANSP.

Triodopsis palustris Hubricht, 1958:74.

PARATYPES NMC 63992 (2 in alcohol, 1 dry)

Locality: Flood plain of Santee River, 5.5 mi (8.8 km) NW of St. Stephen, Berkley County, South Carolina, USA

Collector: L. Hubricht, 19 April 1954

Remarks: Holotype in ANSP.

CAMAENIDAE

Oreohelix Pilsbry 1904

Oreohelix cooperi apiarium Berry, 1919:199, pl 10 figs. 1-9b.

PARATYPES NMC 23126 (3 dry)

Locality: McDonald Canyon, Glacier National Park, Montana, USA. Sta. 16, altitude 3550 feet (1082 m)

Collector: S. Stilman Berry, 29 August 1916

Remarks: This is *Oreohelix subrudis apiarium* of Pilsbry (1939:491).

Oreohelix cooperi limitaris (Dawson, 1875):347 [as *Helix limitaris*].

NEOTYPE NMC 2881 (1 + 4 dry)
NMC 3144 (3 dry)

Locality: Waterton Lake, Alberta

Collector: J.B. Tyrrell, 25 August 1883

Remarks: Berry (1922:4, pl 1 figs. 1-5) amplified Dawson's description (assigning the specimens to a subspecies) and illustrated it. The original description had no figure. According to Berry, the original specimens collected in 1874 could not be located. In a footnote, he quoted from Tyrell's description of the circumstances when Dawson & Tyrell returned to the Rocky Mountains and the above specimens were collected from the same swamp which had provided the original ones, nine years earlier. Pilsbry (1939:490) designated neotype status to NMC 2881 and used Berry's illustration but changed the name to *Oreohelix subrudis limitaris* (Dawson).

Oreohelix strigosa canadica Berry, 1922:6, pl 1 figs. 6, 7.

HOLOTYPE NMC 2882 (dry)

Locality: Valley of the Columbia River, W of the Rocky Mountains at Donald Station, British Columbia

Collector: J.B. Tyrell, 21 September 1883

Remarks: Unique type. Pilsbry (1939:419, 423) synonymized this with *Oreohelix strigosa* (Gould).

Oreohelix waltoni Solem, 1975:21, figs. 3, 4b, 5c, 6d, 8-10, 14-17, 30.

PARATYPES NMC 72060 (13 dry)

Locality: Small lava piles on steep bank N side of road, 1.9 mi (3 km) up John Day Creek from Salmon River, N of Lucile, Idaho County, Idaho, USA

Collectors: A. Solem, A.H. Clarke & R. Vaisey, 18 August 1974

Remarks: Holotype in Field Museum of Natural History.

HELMINTHOGLYPTIDAE

Humboldtiana Von Ihering 1892

Humboldtiana taylori Drake, 1951b:93, pl 13 figs. 1-4.

PARATYPES NMC 9283 (3 dry)

Locality: Site C96, Coahuila, Mexico

Collector: Walter W. Taylor, October 1947

Remarks: Holotype in USNM.

CLASS PELECYPODA (BIVALVIA)
SUBCLASS LAMELLIBRANCHIA
ORDER SCHIZODONTA

UNIONIDAE

Alasmidonta Say 1818

Alasmidonta mccordi Athearn, 1964:134, pl 9 figs. a, b.

HOLOTYPE NMC 20094 (dry)

Locality: Coosa River, Ten Island Shoals, 3.2 mi (5 km) S of Greenport, St. Clair County, Alabama, USA

Collector: H.D. Athearn, 2 August 1956.

Lampsilis Rafinesque 1820

Lampsilis borealis (Gray, 1882):53 [as *Unio borealis*].

SYNTYPES NMC 2375 (2 dry)

Locality: Ottawa River, Duck Island, Cumberland, Ontario

Collector: F.R. Latchford

Remarks: Later considered to be *Lampsilis radiata borealis* (Gray) by LaRocque and Oughton (1937:148) and subsequently synonymized with *L. radiata radiata* (Gmelin) by Clarke & Berg (1959:59).

Lampsilis haddletoni Athearn, 1964:135, pl 9 figs. h, g.

HOLOTYPE NMC 20095 (dry)

Locality: Choctawhatchee River, W fork, 7 mi (11 km) SW of Ozark, Dale County, Alabama, USA

Collector: H.D. Athearn, 23 September 1956

Remarks: This is a unique specimen.

Villosa Frierson 1927

Villosa choctawensis Athearn, 1964:137, pl 9 figs. c, d, e, f.

HOLOTYPE NMC 20096 (dry)

PARATYPES NMC 39673 (8 dry)

Locality: Choctawhatchee River, about 1 mi (1.6 km) downstream from US 90, 2 mi (3.2 km) SW of Caryville, Holmes County, Florida, USA

Collector: H.D. Athearn, 28 November 1958.

ORDER HETERODONTA

SPHAERIIDAE

Musculium Link 1807

Musculium winkleyi Sterki, 1909:66.

PARATYPES NMC 6220 (4 dry)

Locality: Vicinity Danvers, Massachusetts, USA

Collector: Rev. H.W. Winkley, (1896)

Remarks: Placed in synonymy of *Sphaerium lacustre* (Müller) by Herrington (1962:19).

Pisidium Pfeiffer 1821

Pisidium eyerdami 'Sterki' Herrington, 1954:132 (synonymized with *P. casertanum* (Poli)).

PARATYPES NMC 22556 (24 dry)

Locality: Three Saints Bay, Kodiak Island, Alaska, USA. In a brackish pond

Collector: W.J. Eyerdam, August 1931

Remarks: Specimens from this location were sent to Nils HJ. Odhner, labelled as paratypes of *P. eyerdami* Sterki, but Odhner (1939:81) could find no record of publication and considered the specimens to be *Pisidium cinereum* Alder (= *casertanum* Poli).

Pisidium fallax Sterki, 1896:20.

SYNTYPES NMC 4596 (6 dry)

Locality: Tuscarawas River, Ohio, USA

Collector: V. Sterki, October - November 1891

Remarks: Herrington (1962:38) used specimens from UMMZ for his redescription of this species.

Pisidium medianum minutum Sterki, 1899:11.

SYNTYPES NMC 6421 (20 dry)

Locality: Hacket's Mill Brook at tributary to Caribou Stream on the Aroostook River, Maine, USA

Collector: O. Nylander

Remarks: *P. medianum* Sterki, 1899:10 was synonymized with *P. fefrugineum* Prime by Herrington (1962:39).

Sphaerium Scopoli 1777

Sphaerium lavernense Herrington, 1958. In Herrington & Taylor, 1958:10, pl 1 figs. 4-7.

PARATYPES NMC 69061 (21 valves dry)

Locality: Laverne Location 1, NE ¼ SE ¼ section 1, T3N, R27E, Beaver County, Oklahoma, USA

Collector: C.W. Hibbard, et al.

Remarks: Holotype in MCZ.

"Doubtful Types"

ISCHNOCHITONIDAE

Ischnochiton Gray 1847

Ischnochiton retiporosus punctatus (Whiteaves, 1887):125 [as *Leptochiton punctatus*].

SYNTYPE NMC 12335 (1 dry)

Locality: Discovery Passage, British Columbia

Collector: G.M. Dawson, 1885

Remarks: This specimen is considered a type because all the label data are identical with the information recorded for catalogue number NMC 1021 which is noted as "n.sp." and (in remarks) "shell gone". It appears to be part of the original type lot but was catalogued at a later date. Oldroyd (1927c:275) considered this a subspecies; La Rocque (1953:13) and subsequent authors agreed.

LITTORINIDAE

Littorina Ferussac 1822

Littorina conspersa Philippi, 1847.

SYNTYPES NMC 21568 (3 dry)

Locality: Mazatlan, Mexico (Pacific Ocean)

Collector: —

Remarks: This species was synonymized with *L. modesta* Philippi by Keen (1971:366). These specimens (labelled "Type") were presented by J. Ferrier, to the old Montreal Natural History Society which gave its collection to the Perth Municipal Museum in 1936. The Perth Museum donated its mollusc collection to the NMC in 1960.

BUCCINIDAE

Neptunea Bolten 1798

Neptunea stilesi A.G. Smith, 1968:117, pl 14.

PARATYPE NMC 47334 (1 dry) (Smith no. NS X)

Locality: La Perouse Bank, Washington, USA. Depth 120 fm (219 m)

Collector: ?, 1959

Remarks: Holotype in CAS. It is uncertain if the NMC specimen is a paratype, although the label shows Smith identified it: maybe a topotype.

TURRITELLIDAE

Turritella Lamarck 1799

Turritella (Zeacolpus) ahiparana Powell, 1927:297 as [*Zeacolpus ahiparanus*].

PARATYPE NMC 4674 (1 dry)

Locality: Off Ahipara, New Zealand. Depth 20 fm (36 m)

Collector: A.W. Powell

Remarks: This may be a paratype as labelled but in the publication 23 fathoms is recorded as the depth.

GAIMARDIIDAE

Kidderia Dall 1876

Kidderia hamiltoni Finlay, 1926:456.

PARATYPES NMC 4640 (3 dry)

Locality: Macquarie Island, S Pacific Ocean

Collector: "Hamilton Expedition", 1893

Remarks: Although labelled and catalogued as above, it is more likely that these specimens are topotypes according to information available in the literature. Holotype (?) in the Australian Museum, Sydney.

LYMNAEIDAE

Lymnaea Lamarck 1799

Lymnaea proxima Lea, 1856:80.

PARATYPES NMC 40408 (2 dry)

Locality: Arroyo, San Antonio, California, USA

Collector: —

Remarks: These specimens were received in an exchange from the USNM.

HELICINIDAE

Helicina Lamarck 1799

Helicina chionea Pilsbry, 1949:101.

PARATYPES NMC 20654 (6 dry)

Locality: Mejorada (near Huancayo) central Peru. Altitude 2900 m

Collector: —

Remarks: Holotype in ANSP. The label indicates these specimens are "from the original series" but there is no collector or date. These details are also omitted in Pilsbry's description.

POMATIASIDAE

Cyclostoma Draparnaud 1801

Cyclostoma bicolor Gould, 1842: back cover.

PARALECTO-TYPES NMC 7258 (3 dry)

Locality: Cuba

Collector: J. Bartlett

Remarks: Gould (1843:138) synonymized this with *Cyclostoma auriculatum* d'Orbigny. See also Gould (1862: 183) where it is listed as *C. (Megalomastoma) auriculatum* d'Orbigny. Lectotype in MCZ, selected by R.I. Johnson (1964:46).

ENDODONTIDAE

Planogyra Morse 1864

Planogyra asteriscus (Morse, 1857):128 [as *Helix asteriscus*].

IDEOTYPE NMC 3054 (3 dry)

Locality: Westbrooke, Maine

Collector: E.S. Morse

Remarks: Lectotype in MCZ selected by Merrill E. Champion (1947:143).

SYSTROPHIIDAE

Systrophia Pfeiffer 1855

Systrophia cereonitens Haas, 1951:533, pl 117 A-C.

PARATYPES NMC 20649 (5 dry)

Locality: Near San Ignacio, W of Rio Chinchipe, Peru. Altitude 1200 m

Collector: —.

CERIIDAE (CERIONIDAE)

Cerion Röding 1798

Cerion greenwayi Clench, 1934:206, pl 2 fig. H.

PARATYPES NMC 12983 (18 dry)

Locality: N of Cockburn Town, Watling Island, Bahamas

Collector: J.C. Greenway, March 1934

Remarks: Holotype in MCZ. The published account gives two locations for the paratypes but does not specifically mention the above locality, although these specimens are believed to have been identified by Dr. Clench and are marked 'paratypes' on the original label.

Acknowledgements

I acknowledge Arthur H. Clarke who helped to initiate this project and am grateful to Charles G. Gruchy for his consultation and encouragement. The unflagging assistance of the National Museum of Canada library staff is much appreciated and my thanks also to Deanna Beckett who prepared the Index.

Literature Cited

Abbott, R. Tucker 1974. American Seashells, 2nd Ed: 663 p.

Anthony, J.G. 1842. *In* Haldeman, S.S. A monograph of the freshwater univalve Mollusca of the United States including notices of species in other parts of North America. Parts 1-8 (1840-1845). E.G. Dorsey, Philadelphia. Part 4 (Jan. 1842): back cover.

Anthony, J.G. 1850. Descriptions of sixteen new species of *Melania*. Proc. Boston Soc. Nat. Hist. 3: 359-363.

Anthony, J.G. 1854. Descriptions of new fluviatile shells of the genus *Melania* Lamarck from the western states of North America. Ann. of Lyceum of Nat. Hist. N.Y. 6: 80-130.

Anthony, J.G. 1860. Descriptions of new species of American fluviatile gastropods. Proc. Acad. Nat. Sci. Philad., Feb. 1860: 55-72.

Archer, A.F. 1933. A new variety of *Viviparus contectoides* (W.G. Binn) from Jackson County, Florida. Nautilus 47(1): 18-20.

Athearn, H.D. 1964. Three new unionids from Alabama and Florida and a note on *Lampsilis jonesi*. Nautilus 77(4): 134-139.

Baker, F.C. 1907. Descriptions of a new species of *Lymnaea*. Nautilus 20(11): 125-126.

Baker, F.C. 1926. New forms of *Planorbis* and *Lymnaea* with notes on other forms. Nautilus 39(4): 116-121.

Baker, F.C. 1928. Freshwater Mollusca of Wisconsin, Part 1 Gastropoda. Wisconsin Acad. Sci. Arts and Letters: pp. v-xvii, 1-507.

Baker, F.C. 1929. Mollusca from Vermilion and Pelican Lakes, Minnesota with the description of a new variety of *Helisoma corpulenta*. Nautilus 42(4): 131-136.

Baker, F.C. 1930. The molluscan fauna of the southern part of Lake Michigan and its relationship to old glacial Lake Chicago. Trans. Ill. State Acad. Sci. 22: 186-194.

Baker, F.C. 1932. New species and varieties of *Helisoma* and *Gyraulus* from Canada. Nautilus 46(1): 6-9.

Baker, F.C. 1934. A new species of *Gyraulus* from Canada. Can. Field Natur. 48: 135.

Baker, F.C. 1936. The freshwater mollusc *Helisoma corpulentum* and its relatives in Canada. Nat. Mus. Can. Bull. 79, Ser. 21: 1-27.

Baker, F.C. 1939. Land and freshwater Mollusca from western Ontario. Can. J. Res. 17 Sec. D: 87-102.

Baker, F.C. 1945. The Molluscan Family Planorbidae. The Univ. of Illinois Press, Urbana. pp. ix-xxxvi, 1-530.

Baker, F.C. & A.R. Cahn 1931. Freshwater molluscs from central Ontario. Nat. Mus. Can. Bull. 67: 41-64.

Baker H.B. 1964. Type land snails in the Academy of Natural Sciences in Philadelphia, Part 3. Limnophile and Thalassophile Pulmonata; Part 4. Land and freshwater Prosobranchia. Proc. Acad. Nat. Sci. Philad. 116(4): 149-193.

Bartsch, P. 1912. Additions to the west American pyramidellid mollusk fauna with descriptions of new species. Proc. U.S. Nat. Mus. 42 no. 1903: 261-289.

Bernard, F.R. 1967. *Cuspidaria cowani*, a new septibranch mollusc from the northeastern Pacific. J. Fish. Res. Bd. Can. 24(12): 2629-2630.

Bernard, F.R. 1968. *Cyclopecten carlottensis*, a new species of Pectinidae from the northeastern Pacific. J. Fish. Res. Bd. Can. 25(7): 1509-1510.

Bernard, F.R. 1969. Preliminary diagnosis of new septibranch species from the eastern Pacific (Bivalvia, Anomalodesmata). J. Fish. Res. Bd. Can. 26(8): 2230-2234.

Bernard, F.R. 1974. The genus *Calyptogena* in British Columbia with a description of a new species (Bivalvia, Vesicomyidae). Venus 33(1): 1-22.

Bernard, F.R. 1978. New bivalve molluscs, subclass Pteriomorphia from the northeastern Pacific. Venus 37(2): 61-75.

Bernard, F.R. 1979a. New species of *Cuspidaria* from the northeastern Pacific (Bivalvia: Anomalodesmata), with a proposed classification of septibranchs. Venus 38(1): 14-24.

Bernard, F.R. 1979b. Bivalve mollusks of the western Beaufort Sea. Contrib. Sci. Nat. Hist. Mus. Los Angeles County 1979. No. 313: 1-80.

Berry, S.S. 1919. Mollusca of Glacier National Park, Montana. Proc. Acad. Nat. Sci. Philad. 1919: 195-205.

Berry, S.S. 1922. Land snails from the Canadian Rockies. Can. Dept. Mines, Victoria Mem. Mus. Bull. 36, Biol. Ser. 8: 1-19.

Broderip, W.J. 1832. The exhibition was resumed of the new species of shells . . . accompanied by descriptions from the pen of Mr.Broderip. Proc. Zool. Soc. London. Pt. 2, 1832: 124-126.

Burch, J.Q. & Rose L. Burch 1962. New species of *Oliva* from west Mexico.. Nautilus 75(4): 165-166.

Call, R.E. 1886. Description of a new streptomatid mollusk of the genus *Goniobasis (G. ozarkensis)*. Bull. Washburne Coll. Lab. Nat. Hist. 1(7): 189-190.

Champion, M.E. 1947. Edward Sylvester Morse with a bibliography and a catalogue of his species. Occ. Papers Moll. MCZ Harvard Univ. 1(11): 129-144.

Cheatum, E.P. 1971. A new species of *Ashmunella* from the Davis Mountains in west Texas. Nautilus 84(3): 107-109.

Clarke, A.H. 1960. Arctic archibenthal and abyssal mollusks from Drifting Station Alpha. Breviora 119: 1-19.

Clark, A.H. 1961. Abyssal mollusks from the south Atlantic Ocean. Bull. MCZ 125(12): 345-387.

Clarke, A.H. 1963. Arctic archibenthal and abyssal molluscs-II. Molluscs dredged from Drifting Station Charlie (Alpha II). Can. Dept. North. Aff. & Nat. Resources, Paper no. 7. (Preprint to be included in Nat. Mus. Can. Bull. 185, Contrib. to Zool. 1962): 90-109.

Clarke, A.H. 1965. The scallop superspecies *Aequipecten irradians* (Lamarck). Malacologia 2(2): 161-188.

Clarke, A.H. 1973. The freshwater molluscs of the Canadian Interior Basin. Malacologia 13(1-2): 509 p.

Clarke, A.H. 1974. Molluscs from Baffin Bay and the northern Atlantic Ocean. Nat. Mus. Can. Publ. Biol. Oceanog. 7: 1-23.

Clarke, A.H. & C.O. Berg 1959. Freshwater mussels of central New York. Cornell Univ. Agri. Expt. Sta. Mem. 367: 79 p.

Clarke, A.H. & C.R. Harington 1978. Asian freshwater mollusks from Pleistocene deposits in the Old Crow Basin, Yukon Territory. Can. J. Earth Sci. 15(1): 45-51.

Clench, W.J. 1924. A new species of *Physa* from Texas. Nautilus 38(1): 2-13.

Clench, W.J. 1926. Three new species of *Physa*. Occ. Pap. Mus. Zool. Univ. Michigan 168: 1-8.

Clench, W.J. 1927. A new subspecies of *Thais* from Louisiana. Nautilus 41(1): 6-8.

Clench, W.J. 1930. Notes on Physidae with descriptions of new species. Occ. Pap. Boston Soc. Nat. Hist. 5: 301-315.

Clench, W.J. 1934. Notes and descriptions of new cerions from Hispaniola and the Bahamas Islands based mainly upon collections obtained during the Utowana expedition of 1934. Proc. Boston Soc. Nat. Hist. 40: 205-218.

Clench, W.J. 1935a. *Physa ampullacea* 'Gould' Binney. Nautilus 49(1): 30-32.

Clench, W.J. 1935b. A new species of *Cerion* from Long Island Bahamas and a note on *Cerion milleri* (Pfeiffer). Nautilus 49(2): 49-50.

Clench, W.J. 1937a. Three new species of cerions from Long Island, Bahamas. Nautilus 51(1): 19-23.

Clench, W.J. 1937b. Descriptions of new land and marine shells from the Bahamas Islands. Proc. New England Zool. Club 16: 19-26.

Clench, W.J. 1937c. Shells of Mariguana Island with a review of the Bahama Helicinidae and some descriptions of new Bahamas species. Proc. New England Zool. Club 16: 57-79.

Clench, W.J. 1938a. Origin of the land and freshwater fauna of the Bahamas with a list of the species occurring on Cat and Little San Salvador Islands. Bull. Mus. Comp. Zool. 80: 481-541.

Clench, W.J. 1938b. Land and freshwater mollusks of Grand Bahama and the Abacore Islands, Bahamas Islands. Mem. Soc. Cubana Hist. Nat. 12: 303-333.

Clench, W.J. 1947. The genera *Purpura* and *Thais* in the Western Atlantic. Johnsonia 2(23): 61-91.

Clench, W.J. 1952. Land and freshwater mollusks of Eleuthra Island, Bahama Islands. Revista Soc. Malacologica "Carlos de la Torre" 8(3): 97-116.

Clench, W.J. 1957. A catalogue of the Cerionidae (Mollusca-Pulmonata). Bull. Mus. Comp. Zool. 116(2): 121-169.

Clench, W.J. & G.C. Aguayo 1951. Some new cerionids from Cuba. Revista Soc. Malacologica "Carlos de la Torre" 8(2): 69-80.

Clench, W.J. & R.D. Turner 1948. A new *Thais* from Angola and notes on *Thais haemastoma* Linné. Amer. Mus. Novitates 1374: 1947-1949.

Clench, W.J. & R.D. Turner 1956a. The family Melongenidae in the western Atlantic. Johnsonia 3(35): 161-188.

Clench, W.J. & R.D. Turner 1956b. Freshwater molluscs of Alabama, Georgia and Florida from the Escambia to the Suwannee River. Bull. Florida State Mus. 1: 141.

Coan, Eugene V. 1971. The northwestern American Tellinidae. Veliger 14 (Suppl.): 61 p.

Corgan, J.X. 1969. *Odostomia cassandra*. Nautilus 83(2): 71-72.

Cowan, I. McT. 1964. A new species of the lamellibranch genus *Aligena* from western Canada. Veliger 7(2): 108-109.

Cowan, I. McT. & J.H. McLean 1968. A new species of *Puncturella (Cranopsis)* from the northeastern Pacific. Veliger 11(2): 105-108.

Crampton, H.E. 1932. Studies on the variation, distribution and evolution of the genus Partula. Carnegie Inst. Wash., Publ. 410: 335 p.

Dall, W.H. 1890. Scientific results of explorations by the U.S. Fish Commission steamer "Albatross". VII. Preliminary report on the collections of Mollusca and Brachiopoda obtained in 1887-88. Proc. U.S. Nat. Mus. 12 no. 773: 219-362.

Dall, W.H. 1905. Land and freshwater mollusks. Harriman Alaska Expedition 13. Doubleday Paige & Co. Washington: 1-171.

Dall, W.H. 1919. Report of the Canadian Arctic Expedition 1913-18 Vol. VIII, Pt. A: Molluscs Recent and Pleistocene. King's Printer, Ottawa: 3A-29A.

Dall, W.H. 1927. Small shells from dredgings off the southeast coast of the United States by the United States Fisheries steamer "Albatross" in 1885 and 1886. Proc. U.S. Nat. Mus. 70 Art. 18 no. 2667: 1-134.

Dall, W.H. & P. Bartsch 1910. New species of shells collected by Mr. John Macoun at Berkley Sound, Vancouver Island, British Columbia. Can. Dept. Mines, Geol. Surv. Br. Mem. 14N: 5-22.

Dall, W.H. & P. Bartsch 1913. New species of molluscs from the Atlantic and Pacific Coasts of Canada. Can. Geol. Surv., Victoria Mem. Mus. Bull. 1: 139-146.

Drake, R.J. 1951a. A new species of *Polygyra* from west Texas. Revista Soc. Malacologica "Carlos de la Torre" 8(1): 44-46.

Drake, R.J. 1951b. *Humboldtiana taylori*, new species from northern Coahuila. Revista Soc. Malacologica "Carlos de la Torre" 8(2): 93-96.

Drake, R.J. 1952. Change in genus for *Polygyra pasonis*. Revista Soc. Malacologica "Carlos de la Torre" 9(1): 30.

Dunnill, R. & E.V. Coan 1968. A new species of the genus *Macoma* (Pelecypoda) from west American coastal waters with comments on *Macoma calcarea* (Gmelin, 1791). Nat. Mus. Can. Nat. Hist. Pap. 43: 1-19.

Evans, J.W. & D. Fisher 1966. A new species of *Penitella* (family Pholadidae) from Coos Bay, Oregon. Veliger 8(4): 222-224.

Finlay, H.J. 1926. A further commentary on New Zealand systematics. Trans. N.Z. Inst., 57: 320-485.

Garrett, A.J. 1884. The terrestrial Mollusca inhabiting the Society Islands. J. Acad. Nat. Sci. Philad. IX, 2nd Ser. 1884: 17-114.

Goodrich, C. 1929. The pleurocerid fauna of the falls of the Ohio. Nautilus 43(1): 1-17.

Gould, A.A. 1842. Characters of shells to be fully described in the next number of the Journal. Boston J. Nat. Hist. 4(1): back cover.

Gould, A.A. 1843. Synonymy of certain species described on the cover of the Boston Journal of Natural History, Volume 4 number 1. Proc. Boston Soc. Nat. Hist. 1: 137-138.

Gould, A.A. 1862. Otia Conchologia, descriptions of shells and mollusks from 1839-1862. Gould & Lincoln, Boston, MA. 256 p.

Grau, G. 1959. Pectinidae of the Eastern Pacific. Allan Hancock Pacific Exped. Univ. of Southern Cal. Press, Los Angeles, CA. 23: 308 p.

Gray, A.F. 1882. *Unio borealis*. Trans. Ottawa Field Nat. Club, 1882: 53.

Grimm, F.W. 1960. Two new succineids from Maryland, with notes on *Catinella vermeta*. Nautilus 74(1): 8-15.

Grimm, F.W. 1961. *Pallifera fosteri* with *P. megaphallica*, new. Nautilus 74(3): 102-105.

Grimm, F.W. 1967. New species of *Helicodiscus* from Virginia. Nautilus 80(4): 119-120.

Grimm, F.W. 1971. Two new *Stenotrema* with notes on *S. hirsutum* and *S. barbatum*. Nautilus 85(1): 12-17.

Haas, F. 1951. Remarks on and descriptions of South American non-marine shells. Fieldiana Zoo. 31(46): 503-545.

Hanna, G.D. 1923. A new species of *Carychium* from Vancouver Island, B.C. Cal. Acad. Sci. (4 Ser.)12: 51-53.

Herrington, H.B. 1954. *Pisidium* species and synonyms, North America, North of Mexico. Nautilus 67(4): 131-140.

Herrington, H.B. 1962. A revision of the Sphaeriidae. Misc. Publ. Mus. Zool. Univ. Michigan 118: 74 p.

Herrington, H.B. & D.W. Taylor 1958. Pliocene and Pleistocene Sphariidae (Pelecypoda) from the central United States. Occ. Pap. Mus. Zool. Univ. Michigan no. 596: 28 p.

Howard, F.B. 1963. Description of a new *Pyrene* from Mexico (Mollusca, Gastropoda). Occ. Pap. Santa Barbara Mus. Nat. Hist. no. 7 and suppl.: 1-11.

Hubricht, L. 1952. Three new species of *Triodopsis* from North Carolina. Nautilus 65(3): 80-82.

Hubricht, L. 1954. A new subspecies of *Triodopsis fallax* (Say). Nautilus 68(1): 28-30.

Hubricht, L. 1958. New species of land snails from the eastern United States. Trans. Kentucky Acad. Sci. 19: 70-76.

Hubricht, L. 1974. A review of some land snails of the eastern United States. Malacol. Rev. 7(1): 33-34.

International Code of Zoological Nomenclature 1964. International Trust for Zoological Nomenclature, London: i-xix, 1-176 p.

Johnson, R.I. 1964. The recent mollusca of Augustus Addison Gould. USNM Bull. 239: 182 p.

Johnson, R.I. 1975. R. Ellsworth Call with a bibliography of his works on mollusks and a catalogue of his taxa. Occ. Papers on Mollusks, MCZ Harvard Univ. 4(54): 134-144.

Keen, A.M. 1971. Seashells of Tropical West America, 2nd Ed. Stanford Univ. Press. 1064 p.

Keen, A.M. & A.G. Smith 1961. West American species of the bivalved gastropod genus *Berthelinia*. Proc. Cal. Acad. Sci. 30(2): 47-66.

LaRocque, A. 1932. A new variety of *Valvata lewisi* from the Pleistocene of Ontario. Can. Field Nat. 46: 199.

LaRocque, A. 1953. Catalogue of the Recent Mollusca of Canada. Nat. Mus. Can. Bull. 129 (Biol. Ser. 44): 406 p.

LaRocque, A. & J. Oughton 1937. Preliminary account of the Unionidae of Ontario. Can. J. Res. Sec. D, 15: 147-155.

Lea, I. 1856. Description of new freshwater shells from California. Proc. Acad. Nat. Sci. Philad. 1856: 80-81.

Lea, I. 1864. Description of twenty-four new species of *Physa* of the United States and Canada. Proc. Acad. Nat. Sci. Philad. 1864: 114-116.

Lemche, H. 1957. A new living deep sea mollusc of the Cambro-Devonian class Monoplacophora. Nature, London, 179: 414.

Lubinsky, I. 1976. *Thyasira dunbari*, n. sp. (Bivalvia: Thyasiridae) from the Canadian Arctic Archipelago. J. Fish. Res. Bd. Can. 33(8): 1667-1670.

Maynard, C.J. 1889-1890. Contributions to Science. Newtonville, Massachusetts. Publ. by author. Vol. 1: 204 p.

Maynard, C.J. 1913-1926. Records of Walks and Talks with Nature, West Newton, Massachusetts. Publ. by author. Vols. 1-12. Append. to Vol. 5, Feb. 1913. Description of some species of the family Cerionidae. p. 189. Append. to Vol. 10. Contributions to the history of the Cerionidae. Sept. 30, 1920: p. 119, 121. May 2, 1921: p. 131, 132.

Morrison, J.P.E. 1971. Western Atlantic *Donax*. Proc. Biol. Soc. Washington 83(48): 545-568.

Morse, E.S. 1857. Helix asteriscus. Proc. Boston Soc. Nat. Hist. 6: 128.

Odhner, N. HJ. 1939. Sphaeriids from the Aleutian Islands. Nautilus 52(3): 79-84.

Oldroyd, I.S. 1927a. The Marine Shells of the West Coast of North America. Standford Univ. Publ., Univ. Ser., Geol. Sci. 2 pt 1: 297 p.

Oldroyd, I.S. 1927b. The Marine Shells of the West Coast of North America. Standford Univ. Publ., Univ. Ser., Geol. Sci. 2 pt. 2: 304 p.

Oldroyd, I.S. 1927c. The Marine Shells of the West Coast of North America. Standford Univ. Publ., Univ. Ser., Geol. Sci. 2 pt. 3: 339 p.

Oliver, W.R.B. 1926. Australasian Patelloididae. Trans. N.Z. Inst. 56: 547-582.

Pease, W.H. 1864. Descriptions of new species of land shells from the Islands of the central Pacific. Proc. Zool. Soc. 1864: 668-676.

Pease, W.H. 1866. Descriptions of new species of *Partula*. Amer. J. Conch. 3: 81.

Pease, W.H. 1870. Remarques sur certaines espèces de coquilles terrestres habitant la Polynèsie et description d'espèces nouvelles. J. de Conchyl. 18: 393-403.

Philippi, R.A. 1847. Abbildungen und Beschreibungen neuer oder wenig gekannter Conchilien. Kassel. 3 Vols.

Pilsbry, H.A. 1894. Notices of new Japanese mollusks, II. Nautilus 8(1): 9-10.

Pilsbry, H.A. 1898. Notes on new and little-known Amnicolidae. Nautilus 12(4): 42-44.

Pilsbry, H.A. 1901-2. Manual of Conchology (2nd Ser.) 14: 174-286.

Pilsbry, H.A. 1909-10. Man. of Conch. (2nd Ser.) 20: 1-118, 155-336.

Pilsbry, H.A. 1939. Land Mollusca of North America (North of Mexico). Acad. Nat. Sci. Philad. Monog. 3, Vol. 1(1): 573 p.

Pilsbry, H.A. 1944. Peruvian land Mollusca II. Nautilus 57(4): 118-127.

Pilsbry, H.A. 1948. Land Mollusca of North America (north of Mexico) Acad. Nat. Sci. Philad. Monog. 3, Vol. 2(2): 521-1113 p.

Pilsbry, H.A. 1949. New species of *Isomeria* and *Helicina*. Nautilus 62(3): 99-101.

Pilsbry, H.A. 1953. Inland Mollusca of northern Mexico. II. Urocoptidae, Pupillidae, Strobilopsidae, Valloniidae and Cionellidae. Proc. Acad. Nat. Sci. Philad. 105: 133-167.

Powell, A.W.B. 1927. Mollusca from twenty-three fathoms off Ahipara. Trans. & Proc. N.Z. Inst. 58(3): 295-300.

Robilliard, G.A. 1970. The systematics and some aspects of the ecology of the genus *Dendronotus* (Gastropoda: Nudibranchia). Veliger 12(4): 433-479.

Robilliard, G.A. 1971. A new species of *Polycera* (Opisthobranchia: Mollusca) from the northeastern Pacific with notes on other species. Syesis 4(1/2): 235-243.

Robilliard, G.A. 1972. A new species of *Dendronotus* from the northeastern Pacific with notes on *Dendronotus nanus* and *Dendronotus robustus* (Mollusca: Opisthobranchia). Can. J. Zool. 50(4): 421-432.

Russell, L.S. 1961. The National Museum of Canada 1910 to 1960. Dept. of North. Affairs & Nat. Resources, Ottawa. 37 p.

Smith, A.G. 1968. A new *Neptunea* from the Pacific northwest. Veliger 11(2): 117-120.

Smith, A.G. & J.McT. Cowan 1966. A new deep water chiton from the northeastern Pacific. Occ. Papers Cal. Acad. Sci. 56: 1-15.

Solem, A. 1975. Notes on Salmon River Valley oreohelicid land snails with description of *Oreohelix waltoni*. Veliger 18(1): 16-30.

Sterki, V. 1896. Descriptions of new Pisidia. Nautilus 10(2): 20-21.

Sterki, V. 1899. Pisidia new to our country and new species. Nautilus 13(1): 9-12.

Sterki, V. 1909. Description of two new species of *Musculium*. Nautilus 23(5): 66-67.

Stewart, R.B. 1930. Gabb's California Cretaceous and Tertiary type lamellibranchs. Acad. Nat. Sci. Philad. Spec. Publ. No. 3: 314 p.

Verrill, A.E. 1880a. Notice of the remarkable marine fauna occupying the outer banks of the Southern Coast of New England. Amer. J. Sci. 20: 390-403.

Verrill, A.E. 1880b. Notice of recent additions to the marine Invertebrata of the Northeastern Coast of America with descriptions of new genera and species and critical remarks on others. Part II Mollusca, with notes on Annelida, Echinodermata, etc. collected by the U.S. Fish Commission. Proc. USNM Vol. 3, 1880 (publ. 1881): 356-405.

Wells, F.E. Jr. 1974. *Styliola sinecosta*, a new species of pteropod (Opisthobranchia: Thecosomata) from Barbados, West Indies. Veliger 16(3): 293-296.

Weyrauch, von W.K. 1956. Neue Landschnecken aus Peru. Arch. Moll. 85(4/6). Frankfurt am Main: 145-164.

Weyrauch von W.K. 1957. Sieben neue Clausiliiden aus Peru. Arch. Moll. 86(1/3). Frankfurt am Main: 1-28.

Whiteaves, J.F. 1863. On the land and freshwater molluscs of Lower Canada. Canadian Naturalist and Geologist 8: 113.

Whiteaves, J.F. 1878. On some marine Invertebrata from the West Coast of North America. Canadian Naturalist 8(8): 464-471.

Whiteaves, J.F. 1880. On some marine Invertebrata from the Queen Charlotte Islands *in* G.M. Dawson Report on the Queen Charlotte Islands. Rept. Prog. Geol. Surv. Can. 1878-79. (Append. C): 190-205.

Whiteaves, J.F. 1887. On some marine Invertebrata dredged or otherwise collected by Dr. G.M. Dawson in 1885 on the coast of British Columbia. Trans. Roy. Soc. Can. for 1886. 4 (sect. 4): 111-134.

Whiteaves, J.F. 1893. Notes on some marine Invertebrata from the coast of British Columbia. Ott. Nat. 7: 133-137.

Whiteaves, J.F. 1901. Catalogue of the Marine Invertebrata of eastern Canada. Geol. Surv. Can. Publ. 772, King's Printer, Ottawa: 271 p.

Whiteaves, J.F. 1905. Description of a new species of *Goniobasis* from British Columbia. Nautilus 19(6): 61-62.

Willett, G. 1934. Two new Cingulas from Alaska. Nautilus 47(3): 103-104.

Zilch, A. 1954. Landschnecken aus Peru 2. Archiv. Moll. 83(1/3) Frankfurt am Main: 65-79.

Page

johnsoni, Physa 18
johnstonei, Melongena corona 6
josephinae, Cerion (Strophiops) 19
Juliidae 8
karlini, Alvania 4
kempi, Stagnicola emarginata 16
Kidderia 25
kilmeri, Calyptogena (Archivesica) 12
Kurtzia 6
Kurtziella 6
lacustre, Sphaerium 24
lacustris, Probythinella 15
Lampsilis 23
langi, Thais (Thaisella) 5
latestomus, Gyraulus 17
lavernense, Sphaerium 24
Leda 10
Leptochiton 24
lewisi mccolli, Valvata 14
limitaris, Helix 22
limitaris, Oreohelix cooperi 22
limitaris, Oreohelix subrudis 23
Limatula 11, 12
Limidae 11
Lithasia 15, 16
Littorina 24, 25
Littorinidae 24
livescens, Goniobasis 15
Lora 6
louiseae, Limatula 11
louiseae, Seguenzia 3
Lovenella 4
lucayanorum, Cerion (Strophiops) 19
lugubris, Partula 18
Lymnaea 16, 25
Lymnaeidae 16, 25
Macoma 13
macouni, Boreotrophon 4
macouni, Turbonilla (Pyrgolampros) 8
macrostomum, Helisoma trivolvis 17
macrostomus, Planorbis 17
macularia, Cerion 19
macularia, Strophiops 19
magnificum, Carychium 16
Malletia 10
Malletiidae 10
malonei, Cerion (Strophiops) 20
Mangelia 6
Mangilia 6
Margarites 3
marielinum dominicanum, Cerion 20
maurellei, Bela 6
maurellei, Lora 6
mccolli, Valvata lewisi 14
mccordi, Alasmidonta 23
mccleani, Cerion (Strophiops) 20
medianum, Pisidium 24
medianum minutum, Pisidium 24
(Mediappendix), Catinella 21
(Megalostoma), Cyclostoma 25
megaphallica, Pallifera (Pancalyptus) 21
megomphalus, Bostryx 21
Melanella 6
Melania 15, 16
Melaniidae 15
melanostomum, Cerion 20
Melongena 6
Melongenidae 6
messana, Triodopsis 22
minutum, Pisidium medianum 24
modesta, Littorina 25
Montacutidae 12
moralesi, Cerion torrei 20
moreleti, Cerion iostomum 19
mudgei, Ashmunella 22
multicostatum, Helisoma corpulentum 16
Muricidae 4
Musculium 24
Nemocardium 12
(Neopilina), Neopilina 2
Neopilina 2
Neptunea 25
Notoacmea 3
Nucula 9
Nuculana 10
Nuculanidae 10
Nuculidae 9
obovata, Lithasia 15, 16
obtusa, Cerion 20
obtusa, Strophiops 20
occidentale, Carychium 16
(Odontogena) Aligena 12
Odostomia 7
Oliva 6
(Oliva), Oliva 6
Olividae 6
omissa, Temesa (Temesa) 20
oneilli, Macoma 13
ontariensis, Valvata sincera 14
Oreohelix 22, 23
orphanensis, Melanella 6
ozarkensis, Goniobasis 15
Pallifera 21
palustris, Triodopsis 22
(Pancalyptus), Pallifera 21
pannosum, Cerion 19
Partula 18, 19
Partulidae 18
parva, Lymnaea 16
parvus, Gyraulus 17
pasonis, Ashmunella 22
pasonis, Polygyra 22
"Pecten" 11
Pectinidae 11
penderi, Leda 10
penderi, Nuculana 10
Penitella 13
perdepressa walkeri, Valvata 14
pesa, Turbonilla (Pyrgolampros) 8
Philomycidae 21
Pholadidae 13
Physa 17, 18
Physidae 17
piligera yukonensis, Valvata 14

Page

pilsbryi infracarinatum, Helisoma 17
pilsbryi, Temesa (Temesa) 20
pinicola, Catinella (Mediappendix) 21
piraticus, Cerion 20
Pisidium 24
planilabrum, Partula 18
Planogyra 25
Planorbis 17
Planorbidae 16
planospira, Melania 16
plena, Physa 18
Pleuroceridae 15
Plicifusus 5
plumbea, Kurtziella 6
Polycera 9
Polyceratidae 9
Polygyra 22
Polygyridae 22
Pomatiasidae 25
Poromya 13
Poromyidae 13
Portlandia 10
(Portlandia), Leda 10
powelli, Brookula (Benthobrookula) 3
Probythinella 15
Pronucula 10
Propebela 6
proxima, Lymnaea 25
Pseudamussium 11
punctatus, Leptochiton 24
punctatus, Ischnochiton retiporosus 24
Puncturella 3
Pyramidellidae 6
Pyrene 5
(Pyrgisus), Turbonilla 8
(Pyrgolampros), Turbonilla 8
Pyrogolampros 8
quadrae, Odostomia (Evalea) 7
radiata borealis, Lampsilis 23
radiata, Lampsilis radiata 23
radiata radiata, Lampsilis 23
raiatensis, Partula 18
rejecta, Oliva 6
retiporosus punctatus, Ischnochiton 24
richardsoni, Nemocardium 12
rinella, Turbonilla (Pyrgolampros) 8
Rissoidae 4
rushi, Seguenzia 3
russelli, Cerion 20
sablensis, Aequipecten irradians 11
saturna, Limatula 11
scopulina, Notoacmea 3
Seguenzia 3
Seguenziidae 3
simile, Stenotrema 22
simulans, Partula 18
simulans, Partula taeniata 19
sincera ontariensis, Valvata 14
sinecosta, Styliola 8
Siphonaria 9
Siphonariidae 9
Siphonodentaliidae 9
sirius, Siphonaria 9
skidegatensis, Odostomia (Evalea) 7
Sphaeriidae 24
Sphaerium 24
spicata, Oliva (Oliva) 6
spreadboroughi, Odostomia (Evalea) 7
Stagnicola 16
Steeriana 20
(Steeriana) Steeriana 20
stefanssoni, Volutopsius 5
stenopylis, Holospira 21
Stenotrema 22
stilesi, Neptunea 25
strigosa, Oreohelix 23
strigosa canadica, Oreohelix 23
Strophia 19
Strophiops 19, 20
(Strophiops), Cerion 19
Styliola 8
subangulata, Partula 18
subangulata, Partula faba var. 18
subrudis apiarium, Oreohelix 22
subrudis limitaris, Oreohelix 23
Succineidae 21
Systrophia 26
Systrophiidae 26
taeniata simulans, Partula 19
talama, Turbonilla 8
talma, Turbonilla (Pyrgolampros) 8
taylori, Humboldtiana 23
Tellinidae 13
Temesa 20
(Temesa) Temesa 20
Thaididae 5
Thais 5
(Thaisella), Thais 5
Thyasira 12
Thyasiridae 12
Tindaria 10, 11
(Tindaria), Malletia 10
torrei moralesi, Cerion 20
traverseensis, Tromina 5
Triblidiidae 2
tricolor, Polycera 9
Triodopsis 22
trivolvis macrostomum, Helisoma 17
trivolvis winslowi, Planorbis 17
trivolvis winslowi, Helisoma 17
Trochidae 3
Tromina 4, 5
Turbonilla 8
turneri, Penitella 13
Turridae 6
Turritella 25
Turritellidae 25
Unio 23
Unionidae 23
Urocoptidae 21
vadosa, Boreacola 12
Valvata 14
Valvatidae 14
Vancleavia 15

Page

vancouverense, Bittium 4
vancouverensis, Delectopecten 11
vancouverensis, Limatula 12
vancouverensis, Odostomia (Evalea) 7
vancouverensis, Pecten (Pseudamussium) 11
variola, Cuspidaria 14
vermilionense, Helisoma corpulentum 16
vermilionensis, Helisoma corpulenta 16
Vesicomyidae 12
Villosa 23
viridula, Melania 16
vittata, Partula 18
Viviparidae 14
Viviparus 14
Volutopsius 5
vorticiferus, Margarites 3
vorticifera ecarinata, Margarites 3
walkeri, Amnicola 15
walkeri, Valvata perdepressa 14
waltoni, Oreohelix 23
whiteavesi, Cerithiella 4
whiteavesi, Helisoma 17
whiteavesii, Lovenella 4
winkleyi, Musculium 24
winnebagoensis, Valvata 14
winslowi, Planorbis trivolvis 17
winslowi, Helisoma trivolvis 17
Yoldia 10
youngi, Odostomia (Evalea) 7
yukonensis, Valvata piligera 14
(Zeacolpus), Turritella 25
Zilchiella 21
zophos, Nucula 9